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ORIGINAL ARTICLES.

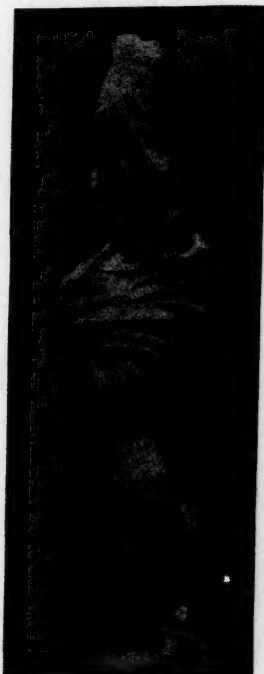
THE OPERATIVE TREATMENT OF LUMBAR (POTT'S) ABSCESS.¹

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PITAL FOR CRIPPLED CHILDREN.

In the *Transactions of the American Orthopedic Association* for 1891, I reported a case of external lumbar abscess, and suggested a division of lumbar abscesses into external and internal, according to their

FIG. 1.



Internal lumbar abscess, showing primary and counter incisions.

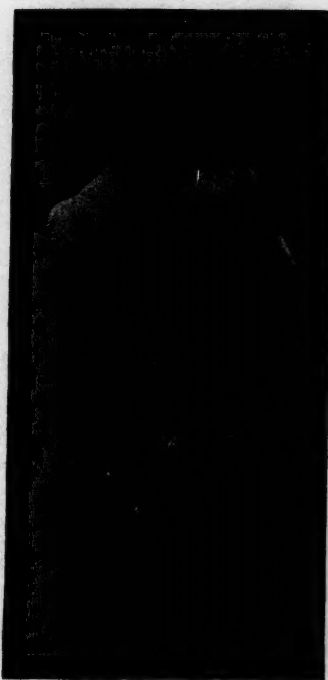
location, relative to the lumbar fascia. During the past fourteen years, a large number of these cases have come under my observation; a few of the abscesses, of small size, have been absorbed under con-

¹ Read by title at the Eleventh Annual Meeting of the American Orthopedic Association, held at Washington, D. C., May 4, 5, and 6, 1897.

servative treatment, but a majority have required operative interference of some kind.

When the abscess is small and the contents not very thick, aspiration, with or without the use of antiseptic injections, is often followed by the disappearance of the lesion. This is, particularly true of external lumbar abscess. When the contents are thick, or consist of caseating material, incision and

FIG. 2.



Lumbar caries, showing position of cicatrix.

free drainage under aseptic precautions is the only plan of treatment likely to be followed by success. The incision must be made at the most favorable point for drainage, and, when possible, through-and-through drainage by means of a rubber drainage-tube or iodoform gauze, will be followed by the best results. When repeated aspirations fail, or when, for other surgical reasons, they do not appear to be indicated, incision and drainage will be necessary. Aspiration has seemed to me to be unsatisfactory and tentative on account of non-withdrawal of caseous clots, except in the cases above indicated. I have not em-

played injections of carbolic-acid solution because of the reported fatal results, nor early radical operations, especially erosion of the vertebra, for the same reason. Dr. Rupprecht of Dresden informed me nine years ago that after a fair trial he had abandoned the radical operation, because fifty per cent. of the patients subjected to it had died.

FIG. 3.



A case of bilateral lumbar abscess, showing posterior deformity and lateral sinuses.

The different forms of lumbar abscesses are shown in the accompanying table :

Course.	Exit.
<i>a. External Lumbar Abscesses.</i>	
Burrow between the fasciæ of the quadratus lumborum and abdominal muscles, through the internal oblique.	Posteriorly beneath the external oblique and latissimus dorsi at the outer border of the erector spinæ muscle.
<i>b. Internal Lumbar Abscesses.</i>	
1. Enter psoas sheath.	As psoas abscess.
2. Gravitate beneath the internal iliac muscles over the posterior brim of the pelvis, perforating the great sacrosciatic foramen.	As gluteal abscess, or as iliac abscess.
3. May be directed to the iliac region along the aorta and external iliac arteries.	As gluteal abscess.

During 1894, I showed two cases of iliolumbar abscess, and referred to a third, before the Philadelphia County Medical Society, all the patients having recovered after through-and-through drainage. The operation advocated in these cases is performed under strict aseptic precautions. The abscess is opened

by careful dissection, the incision being made in the direction of Poupart's ligament, half an inch to the inner side of the anterior superior spinous process. The external oblique muscle is divided in the direc-

FIG. 4.

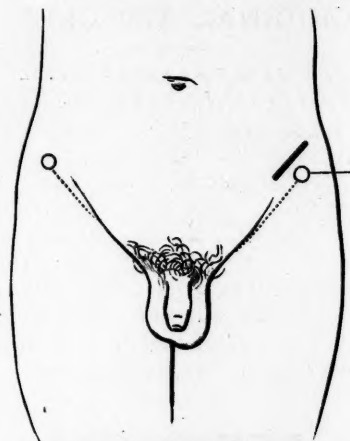


Diagram illustrating position of incision in a case of lumbar abscess.

tion of its fibers, and the internal oblique at right angles, or the fibers are separated. The contents of the sac are evacuated, and a long, heavy grooved director or eye probe is carefully passed up to a point above the sacro-iliac junction, and a straight longitudinal incision made upon it. The counter incision

FIG. 5.

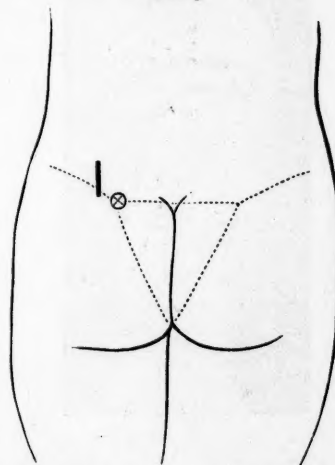


Diagram illustrating position of the counter incision in a case of lumbar abscess.

in two of the cases reported was half an inch to the outer side above the posterior superior spinous process of the ilium. In one case, in which I was associated with Drs. Willard and Ashhurst, it was con-

sidered advisable to remove a portion of the crest of the ilium with a rongeur forceps, so as to permit the drainage-tube to lie flat in the iliac fossa. This appeared to facilitate the drainage and healing of the abscesses rather than to retard them.

The abscess cavity is thoroughly irrigated with boiled water and boric-acid solution. A rubber drainage-tube is passed through it and secured by safety-pins. This is allowed to remain in place for two or three days, after which it is gradually shortened. Half an ounce of a 10-per-cent. emulsion of iodoform is introduced into the cavity, iodoform gauze packed about the wound, and a bichlorid dressing applied.

The indications for this operation are: (1) When the abscess is large and makes pressure upon important organs. (2) When the abscess is increasing rapidly in size. (3) When there is danger of rupture of the abscess into the peritoneal cavity. In the case of a psoas or gluteal abscess it is rarely possible to make a counter opening, and to accomplish through-and-through drainage, a rubber drainage-tube should be inserted into the cavity as far as possible, and the cavity irrigated daily or every other day with boiled water and boric-acid solution, followed by the use of the iodoform emulsion.

In all cases requiring operation it is absolutely necessary to fix the spine as thoroughly as possible by apparatus of some kind. In one of these cases of ilio-lumbar abscess in an adult female, who was under the care of another surgeon, the abscess sinus would not close until the spine was thus secured.

SYPHILIS OF THE NOSE, THROAT, AND LARYNX.

BY PAUL TURNER VAUGHAN, M.D.,
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PRIMARY syphilis of the nose and nasopharynx is of extremely rare occurrence, but several cases have been reported in which the infection was supposed to be due to contact with improperly disinfected Eustachian catheters. Erythema, mucous patches, ulcerations, and gummata may at various times be found in the nose of a syphilitic patient. Usually the secondary manifestations are so slight that they are overlooked, although they often assume a severe form in infants. A nasal catarrh in a child, when very obstinate in responding to treatment, is very suggestive of syphilitic origin. When attended by copious secretions with resulting formation of crusts in the nose, thus occluding the nasal air-passages, a very aggravating and troublesome complication is presented. Not infrequently tertiary manifestations occur early in the course of the disease, and occasion extensive necrosis, both of the cartilaginous

and bony septum and the turbinated bodies. The necrotic process is invariably attended by a most offensive odor, which must not be confounded with that present in atrophic rhinitis. There is a decided difference in the odor caused by the two affections, which is immediately noticed by the expert. Fortunately for the patient, when necrosis begins there is a decided impairment of the sense of smell, or in some instances this sense is entirely lost. It must be remembered that in individuals who are deficiently nourished, syphilitic ulceration and necrosis progress much more rapidly than in well-nourished subjects, and the chances of recovery without serious deformity are much less.

While working in the clinic of Professor Störk in Vienna, and that of Professor Seifert in Würzburg, many opportunities were daily afforded me to study the effects, both recent and remote, of the various syphilitic affections of the nose, throat, and larynx. Primary sores of the pharynx, while moderately common in some parts of Europe, are of comparatively rare occurrence in America; but should a patient present himself with a suspicious-looking sore in the mouth, with enlarged submaxillary glands, and if these symptoms are followed by the appearance of a skin eruption, there can hardly be a doubt that the condition is one of primary syphilis of the pharynx. The initial sore, when found in the throat, usually lasts from four to six weeks, and does not differ materially from the primary syphilitic sore occurring in any other part of the body. The throat manifestations of syphilis during its secondary stage occur either as mucous patches or as erythema of the fauces. The latter condition is considered by the best authorities to be merely a passive hyperemia of the faucial mucous membrane, which, owing to the very vascular condition of the tissue involved, causes a dark, purplish-red discoloration of the throat, particularly marked in the region of the faucial pillars and of the soft palate. There are no markedly uncomfortable symptoms produced by the erythema. It makes its appearance in from six weeks to four or five months after infection. Some authorities consider the erythema of the fauces, and the cutaneous eruption occurring in the secondary stage analogous, and it has frequently been observed that upon the disappearance of the cutaneous eruption the faucial mucous membrane undergoes desquamation.

Mucous patches are considered a rather characteristic symptom of syphilis, and when present in the pharynx they appear by preference to locate about the base of the tongue, on the tonsils, and on the soft palate. They usually occur as bluish-white elevations, and may make their appearance at any time after the initial lesion—even a number of years after

—but are generally observed as a secondary manifestation. In the tertiary state, gummata usually appear, and at first are situated just beneath the mucous membrane. During their early stages they are very small, and often pass unnoticed for a long time, but they gradually enlarge, soften, break down, and finally a yellow, ulcerating surface is presented. These ulcerations are of two kinds, superficial and perforating, and are generally located upon the soft palate, or the tonsils. Their edges are rather irregular, but sharply defined, and they are covered with a dirty, purulent secretion. Granulations are frequently found under this secretion. The ulcers usually extend rapidly, and destroy a great deal of tissue. Neither cartilage nor bone appears to offer much resistance to their extension, and consequently it is imperatively necessary to stop their progress by suitable medication as early as possible in order to avoid disastrous consequences, particularly from cicatrization after the healing process begins to take place.

The diagnosis of a syphilitic ulcer in the pharynx is sometimes very difficult to make, but one cannot be far wrong in suspecting as syphilitic any ulcer occurring in the throat which has a floor covered by a dirty purulent slough, and which is surrounded by angry-looking, very much inflamed mucous membrane. It has been my good fortune to observe several cases of tuberculous ulceration of the pharynx, and of malignant disease of the tonsils, which simulated very closely ulcers of syphilitic origin, and in which the diagnosis was determined with great difficulty. If ulceration has already commenced in malignant disease of the tonsil before a patient presents himself for examination, the differential diagnosis will be difficult, but when one bears in mind the history of the case, the fact that tuberculosis and malignant disease of the pharynx are rather rare conditions, that tertiary syphilis in this locality is commonly observed, that the syphilitic condition responds readily to treatment, while malignant tonsillar disease is not materially benefited, and that tuberculous disease of the pharynx is positively made worse, and all the symptoms of tuberculosis increased by antisyphilitic treatment, the diagnosis is somewhat simplified. A very safe rule, and one recommended highly by Lennox Browne, is to put the patient upon treatment for syphilis, and have him weighed daily; if he gains in weight steadily for several weeks the trouble usually is of specific origin; if he gains in weight for several days, and then begins to lose, the affection probably is malignant, while if all the symptoms are intensified, the probability is that the disease is of a tuberculous nature.

I have never seen a primary sore situated in the

larynx, but the erythema, mucous patch, ulcerative process, and gummata, followed later by breaking down of the gummy tumor and subsequent formation of cicatricial tissue and occurrence of stenosis of the larynx in various degrees, are, with the possible exception of the mucous patch, common pictures to the laryngologist.

A quite marked symptom in a great many cases of syphilis in its early stage is the appearance of laryngeal catarrh, and only in one particular does this differ from an ordinary catarrh, the last-named variety being usually relieved by topical applications, while they are only of limited value in the specific type, one being compelled to resort to antisyphilitic treatment in order to relieve the condition. The erythema is not so marked and is not so characteristic as when present in the pharynx, but it is sufficiently noticeable, particularly when associated with alternating patches of red and white situated on the vocal cords, to lead one to suspect its specific origin. Pain is generally absent. The condition may last a long time if untreated, but shows no tendency to pass into one of the graver manifestations of syphilis. If the vocal cords are involved there may be much impairment of the voice; in fact sometimes the voice is completely lost. Mucous patches are of exceedingly rare occurrence in the larynx, but when present are generally situated upon the upper surface and free margin of the epiglottis, on the arytenoids, or on the false vocal cords, sometimes being found on the interarytenoid commissure. The mucous patch in this position, as elsewhere in the body, is resistant to treatment and is very likely to recur.

Probably the most common manifestation of the disease in its tertiary form in the larynx is ulceration. This is preceded by an infiltration of the mucous membrane with inflammatory products, and is usually diffuse in character. Gummata are commonly situated near the posterior commissure, upon the arytenoid cartilages and epiglottis. At first they are small and of the same color as the contiguous mucous membrane, but gradually they enlarge, soften, a small yellow spot appears in the center of each gumma, and finally a destructive ulcerative process begins. This is usually rapid, and frequently large areas are completely destroyed. When it occurs on the epiglottis entire destruction of the valve may occur before the patient can be brought under the influence of medicine. When much tissue has been destroyed, there will of course, after healing begins, be a formation of cicatrices, with resulting stenosis, and sometimes distortion of the larynx. When this occurs, the voice is permanently much altered in character.

In regard to the treatment of syphilis, when

occurring in the nose, throat, and larynx, I know it is generally considered that to await the development of secondary symptoms and then begin constitutional treatment, is the better course to pursue; but it appears to me that more favorable results are obtained when the patient is put upon some one of the mercurial salts as soon as the diagnosis of syphilitic infection is absolutely decided upon. Local cleansing of the primary sore with some mild antiseptic, as boracic-acid solution, and dusting it with iodol, eucrophen, calomel, or better still, with iodoform (a most efficient but disagreeable remedy on account of its penetrating odor) is all that will be necessary during the first stage. Caustics locally applied during this stage undoubtedly do harm. Upon the appearance of secondary symptoms, either inunctions with mercurial ointment, or the internal administration of some salt of mercury, will cause subsidence of the symptoms. When a mucous patch occurs it should be touched repeatedly with tincture of iodine, or solid nitrate of silver. Catarrh of syphilitic origin requires the administration of ferruginous preparations, and the spraying of the nasopharynx with mild antiseptic and alkaline solutions. In the coryza occurring in infants, the nose should be sprayed cautiously with a weak solution ($2\frac{1}{2}$ grains to the ounce) of cocaine, or, better still, should be cleansed, particularly when the crusts are very adherent, with a ten-per-cent. solution of menthol in olive oil. Menthol is somewhat similar in its action to cocaine; its anesthetic action is very much less, but it is particularly efficient in that it relieves the congestion of the turbinate bodies and allows respiration to take place through the nasal passages. Upon the appearance of tertiary manifestations the administration of iodide of potassium or sodium is indicated, beginning with doses of from five to ten grains, depending upon the tolerance of the patient, three times a day, and increasing it several grains daily until the progress of the disease is checked. In some cases it is best to combine the iodide with mercurial inunctions. It must also be kept constantly in mind that the alimentary canal, the excretory apparatus, and the skin must receive particular attention. Wholesome, nutritious food is absolutely essential to a sound condition of the alimentary tract. Mild salines and laxatives are occasionally required to stimulate excretion, and nothing is of more benefit in keeping the skin in a healthy condition than warm or hot bathing, which should be regulated by the attending physician. Smoking, and the drinking of alcoholic beverages should be prohibited.

A Surgeon Nominated for Mayor.—The English surgeon, Mr. Thomas Webb Fowler, has been nominated for the mayoralty of Coventry.

**THE PRESENT MORTALITY OF DIPHTHERIA;
UPON WHAT ITS FURTHER REDUCTION
BY THE ANTITOXIC SERUM
DEPENDS.***

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THE American Pediatric Society is authority for the significant statement that the results of the serum treatment of diphtheria will gradually and still further improve.¹ The reasons given for this opinion are: that (1) antitoxin is still used at too late a stage of the disease, either on account of procrastination on the part of the physician, or objections on the part of relatives; (2) it is often administered in a half-hearted way, and in doses one-tenth to one-fourth as large as they should be. It has frequently been observed that the percentage of recoveries under this treatment has steadily increased from the beginning. The present mortality from diphtheria—the lowest ever recorded—is pronounced by most observers of large experience with the remedy, especially in private practice, as being too high to represent its powers. "From the most trustworthy statistics which are now available, it appears that the actual mortality from diphtheria (including membranous croup) has been reduced at least one-half by the general adoption of the serum treatment; and that in cases injected during the first two days, the mortality is less than five per cent."²

The mortality from diphtheria under the antitoxin treatment (all brands of the remedy as found in the market being used, and all cases being included irrespective of the time when the treatment was inaugurated) may be stated as follows:³ diphtheria in general, eight to ten per cent.; laryngeal, twenty-one per cent.; operative-laryngeal, twenty-seven per cent.; non-operative-laryngeal, seventeen per cent.; general mortality when antitoxin is used reasonably early, five to seven per cent.; number of cases requiring operative interference, seventeen per cent.

A study of the great volume of literature on the subject shows a pronounced gradual improvement in potency of the serum and the method of its employment. A third element of progress is more than merely implied, *vis.*, a growing appreciation of its efficiency and harmlessness, and a consequent readiness on the part of the physician to employ it. The progress heretofore made in gradually reducing the death-rate of diphtheria⁴ and robbing this disease of its long-sustained high mortality has been made along the line of these three correlated elements of progress.

*Read at the Twenty-fifth Annual Meeting of the American Public Health Association, Held at Philadelphia, October 26, 27, 28, and 29, 1897.

The writer's experience, dating back to the first case treated with antitoxin in Philadelphia (Sept. 22, 1894), corresponds with that of many others, and must become the general experience of the profession in order that the full powers of the remedy may be appreciated. Whereas, in his first cases doses ranging from 400 to 800 units were timidly administered late in the course of the disease (when the condition had become hopeless and other recognized remedial agents had been employed without avail), now, curative doses ranging from 1000 to 4000 units, according to the severity of the disease, are early and boldly given. From three to ten times as many antitoxic units are administered with increasing confidence in from one-third to one-tenth the amount of serum at first required. All these factors have worked together to render the results of the employment of antitoxic serum more favorable.

The further reduction of mortality by the serum-treatment will depend (1) upon still greater improvement in the production and selection of the remedy; (2) upon the general and hearty acceptance of the established principles underlying serotherapy, and (3) upon the employment of the remedy upon a purely rational, rather than upon an empiric basis.

1. The greatest improvement yet made in antitoxin lies in the strength or concentration of the serum.¹ The most concentrated product now supplied to the profession contains 500 antitoxic units to each cubic centimeter of serum. The serums now available vary in strength from 50 to 500 units per c.cm.; the major portion containing from 100 to 200 units per c.cm., and are not standardized, *i.e.*, a specified number of units is contained in a variable quantity of serum. The great advantage of concentrated serums has been recognized from the first, and only such products are recommended by the American Pediatric Society.² The smaller quantity of serum required to secure a full curative dose permits of the use of a much smaller syringe and insures quicker absorption. An antitoxin of 400 to 500 units to each cubic centimeter may be administered in full curative doses by means of an ordinary hypodermic syringe. When a small quantity of serum and a small instrument are used, a little patient is not so easily frightened at a time when it is important to avoid every semblance of excitement. For the same reason it is advantageous to administer the serum between the scapulae where it is not possible for the patient to witness the procedure.

The advantages of smaller dosage and earlier absorption are, however, always secondary to the gain in time required to secure the full therapeutic effects of a given dose. This gain, by the employment of the strongest serums, amounts to several

hours, and is the means of saving many otherwise hopeless cases. This result is due to the smaller quantity to be absorbed and the greater rapidity of absorption. Experience has taught that the more concentrated the serum the more pronounced and immediate are the therapeutic effects. The superiority of tinctures and fluid extracts has led to the almost complete disuse of infusions. Such will also be the case with the weak antitoxic serums when the superior value of the concentrated product becomes generally known. Since the function of antitoxin is to neutralize toxins it may be conjectured that a maximum limit of advantageous concentration probably exists. However, this limit has not yet been reached, and since highly concentrated serums are very difficult to obtain, such a limit is probably not practicable.

In the early days of the antitoxin treatment it was proper to speak of obtaining effects within twenty-four to forty-eight hours. During this time many severe cases necessarily terminated fatally, especially since repetition of the dose was delayed till this period had fully elapsed. At present effects are expected within twelve to eighteen hours, and are early secured in proportion to the degree of concentration of the serum. The general use of concentrated antitoxins of uniform quality will insure increasing success in the treatment of diphtheria.³ The importance of great care in selecting an antitoxin cannot be overestimated, as some of the serums upon the market have been proved to contain but one-third to one-half the potency stated on the label.^{4 5 6}

2. No therapeutic principles are more firmly established than those upon which the serum-treatment of diphtheria is based. An adequate appreciation of these principles as well as of the indications for the administration of the remedy will produce better and better results. "If an animal has been artificially protected against a particular infection (*e.g.*, diphtheria), its blood or serum acquires the power, when injected in sufficient quantity into another animal, of directly transmitting immunity to the latter."⁷ This is a law so firmly established, experimentally and clinically, that it is appropriately called one of the "articles of faith of the bacteriologist." There is no reason why the profession should not accept it. Such acceptance will prove very salutary to the further reduction of the mortality-rate of diphtheria.⁸

As the remedy is antidotal and the lesion of diphtheria toxic, it follows that in no other disease is an intelligent appreciation of the immutable relation existing between remedy and disease so potent a factor in obtaining the highest possible results from treatment. Similarly, the appreciation of the importance of the early administration of antitoxin is es-

sential to the highest success. The lesion of diphtheria being toxic, and death, if not caused by obstruction to respiration, being due to poisoning, it follows that the longer the tissues are exposed to the action of the toxin, and the more virulent the poison is, the more surely fatal will be the result. To appreciate this is to understand the necessity for the administration of maximum doses in malignant cases and in all cases seen late in the course of the disease, and also to know the importance of supplementary, general, sustaining, and tonic treatment. Jacobi¹ has well said that "many cases might be saved by the timely use of a few grains of digitalis, camphor, musk, or other cardiac tonics." It is expected that a physician will know beforehand whether or not, in a given case, the heart will be likely to carry its owner through an inflammatory or infective process in the absence of sustaining treatment. Incidentally, it may be remarked that when the laity, instructed by the profession, understand the importance of reporting all cases of throat disease early, a further reduction of mortality will easily become possible. The tentative treatment of diphtheria is sufficiently condemned, by centuries of high mortality under its general employment.² Harsh mechanical interference merits the same fate.

3. Antitoxin must be employed in the same manner as any other antidote in order to obtain the best possible results. No rule can be formulated for dosage, except that it should always be strictly graded to the severity of the case. A dose containing less than 1000 units should not be regarded as curative, and the general acceptance of this truth will be powerfully efficacious in reducing the present mortality. Curative doses of 500 units, experience has proved, are not to be relied upon. Treated very early, it has happened that several successive cases responded almost miraculously to such doses, while, on the other hand, several others, following these in succession, speedily proved fatal. The severity of the infection is not easily recognized early in the course of the disease. Clinically, it is probably impossible to determine which cases will require the antidotal effect of but 500 units.

The importance of the initial dose, as compared with any other that may be subsequently required, cannot be too strongly emphasized in this connection.³ No maximum dosage has as yet been determined, and probably never will be. Reports from many large users of diphtheria antitoxin show that at present curative doses ranging from 1000 to 6000 units are employed, and, when graded to the severity of the case are yielding the best results. The necessity of a second dose is evidence that the first did not contain enough antitoxic units. During the in-

terval the tissues are still exposed to the unneutralized toxins, and, meanwhile, the necessity for the remedy is increasing and the resistance of the patient is decreasing. When repetition of the antitoxin is necessary, the interval between doses should be short—when concentrated antitoxin is employed, never less than twelve hours. With this end in view, in the malignant form of the disease from 2000 to 4000 units should be injected as early as possible. One dose of 2000 units, experience has explicitly proved, will result in a larger proportion of cures in this form of diphtheria than will three or four doses of 1000 units each, given at intervals of from twelve to thirty-six hours. The writer's first antitoxin case terminated fatally for want of a sufficiently large initial dose. By aggressive treatment truly moribund cases are saved, as testified by many observers.

The double function of the diphtheria antitoxin is to neutralize toxins and arrest the disease. In pharyngeal types the danger is in early toxemia; in laryngeal types, from suffocation. In the former abundant vascularity and glandular structures favor rapid absorption, and in treatment facilitate the arresting of the disease. In the latter the dense basement membrane underlying the local lesion retards absorption, and in treatment resists the antitoxin. For these reasons, in severe cases of the former, especially when nasal, and in all cases of the latter, the initial dose should never be less than 2000 units.

It should be remembered that it is possible to neutralize the absorbed toxins so slowly or so late that death results from the damage sustained before the remedy was given. Likewise, in laryngeal cases, care must be exercised lest suffocation result from the copious expectoration which follows the full effects of the remedy.⁴

While the serum treatment has greatly simplified the management of diphtheria, reduced the personal risk to the physician, and already at least doubled the number of cures formerly obtained, each case continues to be a subject for special study, especially, in regard to the individual adaptation of doses and other measures of treatment.

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WATER PURIFICATION HYGIENICALLY CONSIDERED.

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(Continued from page 635.)

THE cost of constructing a complete filter-bed an acre in size varies from \$20,000 to \$100,000, according to the topography, the availability of suitable sand and other material, the cost of labor, and other elements. An open filter-bed, having tight concrete bottom and sides, with proper regulators and piping, not including settling or receiving basins, may roughly be said to cost at least \$1 for every square foot of filtering surface. Half as much again must be added for a suitable covering to prevent the growth of algae and keep the water of more even temperature. In northern localities some covering is desirable because of the considerable impairment in efficiency caused by ice during winter. At Hamburg, open filters are employed and successful cleaning of an ice-covered filter is accomplished, without the usual removal of the water, by using a sort of trawl scraper suspended at the right level by floats and moved across the sand-bed. This is explained and very well illustrated in the *Journal für Gasbeleuchtung und Wasserversorgung*, 1897, page 4, a portion of the illustrations and summary of which appeared in the *Engineering Record* for May 1, 1897.

When suitable fine sand is not procurable in the neighborhood, the expense of procuring it may be too great to warrant its use. Crushed quartz, especially adapted for sand-filters, costs at the rate of more than 60 cents per cubic foot, weighing about ninety pounds. When the cost of the sand is thus prohibitive, and when ground enough properly located is not to be obtained at a reasonable price, recourse may be had to mechanical filters, which occupy much less space and require much less sand, since water flows through them fifty or more times as rapidly as through the same area of gravity sand-

bed. While these are more expensive to construct, the operating expense is much less than that of mechanical filters, being mainly that of cleaning and restoring the surface. It may be roughly estimated at nearly \$10 per million gallons of filtered water. It is claimed that a few plants require much less than half this outlay, while others cost half as much again. At Lawrence, Mass., the cost was less than \$7 per million gallons during 1895. Nearly forty per cent. of the expense was for removing ice, while less than half was for scraping and replacing sand. Nearly fourteen per cent. of the charge was for washing the removed sand.

Filter-galleries, situated in the low banks of rivers, are fed rather by ground waters from the upland side than by filtration of river water, which does not filter with practicable speed through the very resistant mud and silt. When the river rises and its water flows into the galleries through coarse sand and gravel, it is likely to render the supply less wholesome by reason of the ease with which bacteria can pass through. Thus, at Dresden, where a ground water-supply of this sort is used for a demand a third larger than originally planned for, it is found that when the Elbe rises more than a meter above its normal level, the bacteria of the water (usually twenty to forty per cubic centimeter) increase to several thousand. With this increase a greater number of gastro-intestinal disorders than usual occur, especially among infants, and their mortality is increased (Meinert). For such filter-galleries it is essential to have water-tight barriers constructed to keep out any inundation or any inflow of water through ground that is not of a perfectly filtering character.

While figures may prove very misleading when not carefully interpreted in the light of the exact conditions obtaining, it is not un instructive to give a few statistics to illustrate the hygienic value of good filtration. The great cholera mortality (8200) at Hamburg during 1892, while the similarly situated neighboring city, Altona, using worse water from the same much-polluted river was comparatively free, was because the latter had good filtration, while at Hamburg the old filters were defective and the new ones not quite finished. The typhoid mortality there is only 58 deaths per 1,000,000, while at Altona it is 41, and at Berlin, between 40 and 65. Amsterdam, filtering water from sand lakes or canals, has but 28 deaths per 1,000,000. These figures compare favorably with those of cities supplied with first-class mountain water, Munich having 32, Vienna 40, and Nuremberg 42 deaths from typhoid per 1,000,000. As against the results of these naturally or artificially pure waters, may be quoted Maline, supplied by

shallow surface wells, the mortality there being 993.¹ This, however, is exceeded by the Chicago typhoid death-rate for 1891, which Hill gives as 1600. He gives that of Pittsburg (for 1893) as 1110, St. Louis (1893) as 1030, and of Lawrence, Mass. (1892), 1020.

Artificial sand-plate filters (Fisher system) are said to be employed with great success at Worms, Westerhüsen (near Magdeburg), and at the Müggel-lake intake near Berlin. The writer has never tested these, but credible reports would make them seem about equal to good gravity filters as regards bacteria-removing efficiency, while the yield is proportionately much greater. If thorough tests, carried out impartially at the last-mentioned station, confirm the excellent results claimed elsewhere, it may well be believed that this method, which seems the revival of an older idea, is practicable on a large or small scale. The plates are easily and quickly cleaned and, like mechanical filters, have the advantage over gravity sand filter beds that they can be sterilized promptly and completely by steam in case of typhoid, cholera, or other infection having entered. They are very strong and have the especial merit of simplicity and freedom from increase of bacteria at the beginning of the flow just after cleansing, as also under a considerable increase of pressure. This would mean that attempts to overwork them, so common with mechanical sand-filters, would not produce such bacteriologically bad water as results from the latter under such circumstances. They are said to be composed of fine sand and finely ground soda-water-bottle glass mixed and heated to 1200° C. The slabs are nearly forty inches square and four inches thick. They are screwed together and the edges cemented. A number of them may be arranged in line to form a pipe into which water filters from without.

In some cases in which filtration is deemed necessary for a municipality, an industrial plant or even individual systems, the slow, gravity-sand-bed system above considered appears impracticable, or less desirable than mechanical filtration, even for a large supply. This may be due to remoteness from a supply of good sand, or the ground may be limited, or other economic reasons may obtain. Whatever make be selected, even including the invertible patterns as that of Kröhnke or of Carl Schultz, it will be quite similar to its numerous rivals. These mechanical filters operate by causing the crude water to flow rapidly, usually under hydrant pressure, through comparatively small masses of fine sand, coke-powder, or similar substance enclosed in cylinders of wood or iron. Mere sand (or coke, etc.) alone will

not be capable of holding back many bacteria, nor will it strain turbid water sufficiently clear, but the preliminary addition of one or two (or more) parts of a coagulant, such as an alum or iron salt, to one hundred thousand parts of water usually causes the formation of a gelatinous film which, settling within an hour upon the surface of the sand and also to a certain extent between the grains, when skilfully managed will cause such a filter to produce clear water which compares favorably with that from good gravity sand-filters. A permeable bottom supporting the sand allows water to flow downward into the outlet and also permits purified water to be driven backward for the (from one to five) daily washings. Upon this a layer of coarse sand or crushed quartz about a foot deep should be placed. This supports a two-foot layer of fine sea sand or crushed quartz (or coke, etc.) of an effective size of from .3 to .5 mm. (from $\frac{3}{16}$ to $\frac{5}{16}$ of an inch). Into the space above this, crude water for purification is introduced after alum has been added.

Both as an expert trying to aid in obtaining the best possible results, and also as an impartial scientific observer wishing to determine how widely such filters vary in efficiency, the writer has tested many of these. While his investigations have been less complete than those conducted at Providence, R. I., during 1893, and at Louisville, Ky., during 1896, as regards thorough and constant study with one kind of water, they yet serve to show the results accomplished by such filters under ordinary as well as expert management in actual every-day use under practical working conditions. Tested regularly and irregularly in this way, mechanical filters generally show less constant and perfect results than do gravity sand filter-beds, but this is more owing to lack of careful management and insight into the principles of operation than because of any inherent defect in the method. Almost all of the various makes will do excellent work, clearing muddy water and reducing the number of bacteria to less than one per cent. of the original amount; and yet some of the best makes, as typified by filters established in permanent operation, and referred to in the makers' circulars, have been found to produce an effluent having more than fifty per cent. of the bacteria (of all varieties) occurring in the crude water. On the other hand, some of them at times are found, without any unusual care, to produce water almost entirely free from bacteria, provided they are worked at much less than their full capacity. Others, when overworked, offer insufficient resistance to bacteria and turbidity. They are comparatively complex and usually dependent upon constant skilled supervision. Their all-important bacteria-separating film, unlike that of the surface of

¹ Smee, *Lancet*, March 13, 1897.

gravity sand-beds, not lasting for weeks perhaps when once established, but rather being destroyed by the necessary washing at least once daily, and perhaps five times, the operation cannot be so well controlled as that of the slow filters. With the latter, the yield may be stored in a separate basin until the usual gelatine test shows whether the film is separating bacteria properly. But with mechanical filters the essential filtering-film must have been removed, as also a number of subsequent ones, under conditions of economic working, long before a bacteriologic test can have been completed. This is a very important consideration especially at times of epidemic and actual infection of the water.

A point in favor of mechanical filters is that they can be completely disinfected by steam or boiling water, the most satisfactory of all means. Within these filters the sand does not remain in as permanently good working condition as in those parts of gravity sand-beds which lie beneath the surface. Accordingly, it needs to be steamed or else scoured with a four- or five-per-cent. solution of caustic soda, or both processes may be employed, at least twice yearly. Otherwise, bacteria, not removed by the daily washings, grow in time so numerous as to contaminate the effluent, and among these may be disease germs. If their presence be suspected, and certainly if demonstrated by culture-tests of the sand or water, sterilization of the filter is necessary. Mechanical filters involve considerably greater expense for operating than do gravity-beds. On the other hand, the plant costs less than the best water-tight slow sand-beds complete. Although alum costs less than two cents a pound, this proves a costly item when used for large quantities of water. When the filter is working well, the proportion of alum used may be only one part to a hundred thousand parts of water, or less than half a grain to the gallon. In practice, however, this proportion of the coagulant is often considerably exceeded, whether through carelessness or because of very muddy or peaty quality of the water, and this of course increases the expense. From such permissible small amounts of alum as remain unchanged in the purified water we cannot recognize any danger to health or detrimental influence upon boilers or industrial processes. This alum is almost entirely decomposed in making the desired film of flocculent alum hydrate and of a combination with organic matter present. The sulphuric acid set free combines with the earthy carbonates present and thus tends to become neutralized. At the beginning of filtration, after the film and dirt have been washed out, an excess over the usual minute amount of the coagulant is commonly added to hasten the formation of the necessary film. What-

ever of the salt remains uncombined is washed out with the first few minutes' flow of water. Since this water has very many bacteria present, it is purposely wasted from well-managed filters. This amount of water wasted varies from three to eight per cent.

While only vertical cylinders are spoken of above, it should be mentioned that horizontal cylinders are in some cases employed in large plants, yet both are the same in principle. Even an invertible one, such as that of Mr. Carl Schultz, or like those used for the Kröhnke deferrating process, work in practically the same way, the peculiar construction being only a modification designed to facilitate cleansing. Mechanical filters may be combined to any number to make "batteries" and thus millions of gallons be produced by one plant. Individual filters vary in size from one foot to ten feet in diameter. Since the water is meant to flow through nearly sixty times as rapidly as through a slow gravity filter-bed, a filter ten feet in diameter, and having an effective filtering surface of about seventy-eight square feet, would be expected to yield from 100 to 250 gallons per minute, but should not be allowed to exceed that amount. Filters one foot in diameter are capable of yielding 100 gallons per hour, and in complete working order cost not far from \$100. They are intended for private houses and serve the purpose of clearing all the water for the household under ordinary conditions, but they cannot respond to sudden demands for a large quantity of good filtered water as the combined draft for laundry, and other purpose, coming at the same moment would produce unsatisfactory water. Accordingly, storage-tanks are needed, and wood will usually be selected as the material. This, and also the filter, usually do not receive careful attention and the water is then too often likely to yield many bacteria when tested. Pure drinking-water would be better insured by a battery of Berkefeld filter-tubes kept in good order and sterile, which, even at present high prices, would prove less costly. A drawback to some of the best varieties of mechanical filters is threatened litigation if the coagulant be added just as the water enters the filter. The Hyatt patent, controlling this, expires within four years. The use of a preliminary settling-tank or basin is not thus restricted, but seems less satisfactory.

Sedimentation is of recognized value in reducing the number of bacteria as well as turbidity of a mass of water, which can remain at rest or nearly so as in storage-basins, and in lakes, or lake-like enlargements of rivers, when the current is very sluggish. Various bacteriologists have found this to be the case, and the writer's studies of lakes and reservoirs, especially when much silt was present, have tended to

confirm this view. The presence of settling-basins, with or without aerifying arrangements for the inflow, is of value as an auxiliary, but is not of enough absolute potency to warrant exclusive reliance upon such means. In most of our streams and bodies of water which receive bacterial contamination from sewage and other filth, sedimentation does not seem to accomplish much. It is, as already said, the element of great dilution which seems to be the chief factor in improvement of the water. Light (which favors the production of algæ) lessens bacteria, especially when the water is well aerified, according to most experiments conducted in that direction; and strife among bacteria is regarded as aiding the process. If a small volume of infectious washings from a privy-vault, manured field, or sewage outlet, mingle with abundant water of a large stream, the tendency to diffusion throughout the large volume of water causes a sample taken lower down stream to show many less bacteria, as well as greatly diminished chemie impurity, unless some intervening contamination complicates the conditions. In small streams, flowing through densely peopled industrial districts, this natural purification is so much less potent that English investigators have declared that a stream much polluted cannot again become pure. In our copious rivers, as also on the Continent of Europe, such an assertion is easily disproved, yet the experiences of some of our cities show that extreme vigilance must be exercised if the water-supply comes from a contaminated river. An arbitrary statement that fifteen or even fifty miles of flow insures the destruction of all harmful contamination is not always substantiated by facts. In this connection, although the same principle has not been shown to be operative in our streams, it seems proper to mention Hankin's observations on the peculiar quality of the water of the great rivers of India¹, in which certain acid substances, volatile on heating, destroy all cholera bacilli that enter the streams, although these dangerous germs increase vigorously in well waters of those regions.

Observation shows that storage for months tends to lessens or remove color and odor from water; but when light is not excluded, algæ are likely to flourish, if nitrogenous elements in an assimilable form, and special mineral constituents, and other conditions, are present to favor their growth. Even when such storage is practicable, it is always preferable to have water in the beginning so pure that none of the causes of odors, such as infusoria, sponges, nostoc, etc., or any dead animal or vegetable matter, are likely to occur. Although such waters are not known to have directly caused disease, a fishy, or other re-

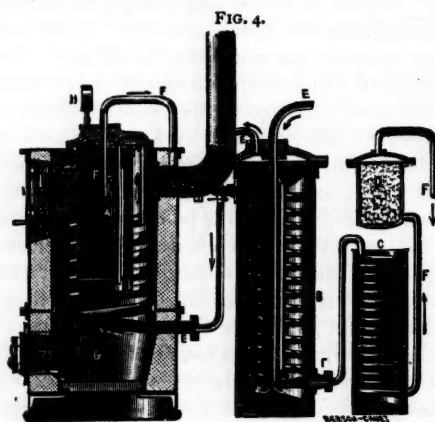
pellant odor or taste, can make a water so offensive that people will not drink it, and it will arouse more emphatic protest than even the known presence of disease-causing germs. If a reservoir be created by damming up and overflowing fertile slopes or meadows, the soil should be dug away so as to remove roots of grass and bushes, may be to a depth of more than two feet; otherwise, decomposing organic matter may cause bad odors to arise in water stored there.

Heat kills the germs of disease and all other living things. If water be boiled long enough, no bacteria or other organisms will remain alive in it. This, in its practical bearings, has long been recognized. The writer pursued a prolonged and careful series of experiments some years ago in this country (chiefly in the Carnegie Laboratory) and in Koch's laboratory in Berlin, employing various natural and artificially infected waters, and demonstrated that simply bringing water to nearly the boiling-point, and then allowing it cool gradually, sufficed to destroy the elements of infection. Thermophilic bacteria and some common kinds require very much longer heating for their annihilation, but practically a brief heating answers the hygienic purpose. This means can be employed almost anywhere and is to be recommended at least as a makeshift under urgent circumstances, as when the water-supply is bad or even suspicious and yet no adequate purification obtains. Since boiling drives off air and also carbonic-acid gas (causing the separation of lime and magnesia), the water in most cases is thereby made somewhat less palatable; although the taste of some malodorous and unpalatable waters is improved by heating. Subsequent aerification, as by use of a bellows or more elaborate appliance for exposing the water to as pure air as possible, effects an improvement. The addition of a small amount of tea improves the taste for some people.

Within the last ten years several economic contrivances for heating water to the boiling-point and cooling it to within a few degrees of its original temperature have been perfected by Yaryan, Siemens, Grove, Rouart, and others. The apparatus of the first-named inventor, as designed for the use of a large municipality, was carefully tested by the writer in Toledo and found capable of completely sterilizing the hydrant water of that city. The principle employed by all these independent inventors is a series of pipes so arranged that by connection the cold inflowing water cools the outflowing sterilized stream and is at the same time gradually heated before it arrives at the boiler. Thus a minimum expenditure of fuel is required. The accompanying illustration (Fig. 4), supplied through the courtesy of Rouart Frères of Paris, shows an apparatus which is claimed to have

¹*New York Med. Jour.*, April 10, 1897, p. 503.

achieved a practical success. The arrows indicate the course of the water from the inflow E. to the outflow F. The yield is of better quality than non-aerified, boiled water, since not much more than half of the oxygen is lost in a well-constructed apparatus. Lime and magnesia are considerably reduced, as also are the other mineral salts and the organic matter. Despite the theoretic merits of these economic sterilizers for water which is clear but infected, they have not found practical acceptance unless in a very limited way.



Water Sterilizer.

Distilled water is considered desirable for the most economic and satisfactory results in certain processes, as also for human consumption, when the natural supply is of poor quality, and especially when it is charged with poisonous or other mineral salts. To supply this need at a low cost, on a large scale, excellent stills exist. On shipboard, particularly when the vessel is on a prolonged voyage or cruise away from ports where good, fresh water can be obtained, distilled water, easily prepared and palatable, is not only very convenient as saving the space of storage-tanks (too often defective) and casks likely to become foul, but is also of considerable sanitary value. This is evidenced by statistics of the naval and marine service before and after the introduction of the regular use of the Baird, Niemeyer, and other excellent stills. All properly constructed ones yield water free from bacteria if due care be taken to have the condensing and outflow portion and any filter there sterilized by steam before using. Instructions should also be given to waste for ten or twenty minutes the first flow of water after long disuse of the apparatus. This is to avoid chemic impurities. Lead should never enter into any part of the construction of tanks or stills, for the danger of poisoning is considerable, even from solder. Tin shown by assay to be pure should be used for joints of tin plates and tubes, although

more difficult to work with than solder. Iron rusts, and is, therefore, inferior to well-tinned copper plates or drawn brass coils well tinned inside and outside. Abundant sea-water cools the steam coils by flowing in at the bottom and out at the top on one side of the tight casing inside of which are the smooth or corrugated coils of vertical pipes into which steam under low pressure enters at the top. At the lower end of the condenser the distilled water flows out or is drawn out by a pump where a filter (of asbestos or pure bone, charcoal, and sand) is present, for the purpose of relieving the water of the whitish flecks and oily taste which come from slight quantities of lubricating oil going over with the steam. When the steam pressure is high this oily taste is more likely to occur than when the pressure is quite low, as from an evaporator especially introduced for the sole purpose of vaporizing sea or other water in order that it may, on condensation, become distilled water. From a perfect still very pure distilled water can be produced, having none of the salt or other undesirable constituents of the original water. If petroleum lubricants are used, they tend to cause an increase of ammonia above the small amounts which can be detected in almost all distilled water. At the end of every voyage the filter attached to the condenser of a vessel's still should be cleansed and sterilized by steam sent through the still. The distillate should also be tested from time to time to detect any leakage of the cooling salt water into it. One need only add a drop or two of a solution of silver nitrate, slightly acidulated with nitric acid. If any salt has entered the distilled water, this reagent will produce a visible whitish cloud or precipitate when added to the water in a glass.

Aerification of distilled water should be so managed as to introduce no bacteria, and certainly no harmful ones. Previous filtering of the raw water and boiling long enough to insure the driving off of the more volatile organic matter previous to distillation is regarded by Mr. Hallock, the expert chemist of the Schultz establishment, as the best means of preventing the usual taste of ordinary distilled water, and more satisfactory than the preliminary addition of such an oxidizing agent as permanganate of potash. For the Wittman still the water is twice boiled and superheated before being vaporized. Thus, for artificial ice or artificial mineral waters the maker who is careful enough to use distilled water avoids the necessity of aerifying it, which process too commonly allows the introduction of bacteria of numerous kinds which may be in the air, and which, despite cotton and other filters of the air, are always found in waters of most establishments.

(To be continued.)

CLINICAL MEMORANDUM.

A CASE OF POISONING FROM EATING LOBSTER.¹By CHARLES SCHRAM, M.D.,
OF NEW YORK.

THE case which is here presented is offered with some diffidence, as I am aware of the vulnerable points in the diagnosis. However, it is the one at which I arrived, and which has been strengthened by the peculiar complex of symptoms manifested during the progress of the illness.

The patient, a married woman, twenty-nine years of age, was born in Russia. I saw her for the first time on the afternoon of October 9th. Her health had always been good; digestion excellent; disposition calm and cheerful. She is the mother of two healthy children, the youngest being ten months old. Nine days previous to the time the illness began a death somewhat unexpectedly occurred in the family the shock of which caused mental depression and impairment of appetite. Four days before coming under my observation the patient partook of boiled lobster, of which other members of the family also ate. Three days later persistent and uncontrollable vomiting began, and the vomitus at first consisted of food taken that morning, then of bile, mucus, and finally everything swallowed was at once rejected. Concomitant symptoms were obstinate constipation, frontal headache, dizziness, excessive thirst, gastric and abdominal pain, severe pain in the limbs and in the small of the back, and ringing in the ears. These symptoms had continued up to the time of my first visit. The patient appeared to be a robust, well-nourished woman. She was anxious, irritable, and apprehensive as to recovery. Her face was pale; tongue thickly coated; breath fetid; skin hot and dry; pulse hard, 112-116 per minute. The lungs were normal; the heart-sounds sharp, but not indicative of disease; abdomen somewhat distended and tympanitic. The abdominal tenderness was general, though more acute over the epigastrium and course of the colon, particularly at the flexures of the latter; there was gurgling on pressure.

I prescribed 8 grains of calomel in divided doses, but through a misunderstanding the patient received eight, $\frac{1}{4}$ -grain tablets; she was given boiled water in abundance, and brandy in dram doses repeated every two hours, no food being allowed. In the evening the temperature rose to 102.5° F., and remained near this point until the crisis of the illness, which occurred three days later. The day following my first visit the vomiting ceased. As the bowels had not moved, she was given 8 grains of calomel in four equal doses, which caused two small liquid movements. There was no amelioration of the symptoms except the emesis. Meanwhile, the bacteriologist, to whom a specimen of the blood had been sent, reported that the Widal test gave a positive reaction; in fact, Dr. Park of the Health Department assured me that I undoubtedly had to deal with typhoid fever. On the strength of this re-

port I placed the patient upon a fluid diet, sponge-baths, and β naphthol-bismuth, beginning with 5 grains every three hours.

On the morning of October 12th the general condition seemed much improved, although the backache and tenderness over the epigastrium and descending colon still continued. The intestinal distention had nearly disappeared. The patient expressed a desire for solid food. As no evacuation of the bowels had occurred during the previous thirty-six hours, an enema of salt water was ordered. This resulted in a large semisolid movement, and was followed, within one-half hour by a severe chill, subsequent to which the patient collapsed and became pulseless. When I again reached the bedside, after an urgent call by telephone, the patient was bathed in a cold perspiration; pulse about 136, feeble, but regular. The mind was clear, though the patient was anxious and momentarily expected death. There was slight dyspnea; excessive thirst; abdominal distention diminished, and tenderness gone. No sharp abdominal pain preceded the chill. The morbid picture presented vividly reminded me of several experiences which I had while an interne in the Boston Lying-In Hospital, when I observed septic patients, after the uterus had been irrigated and curetted, who were seized with violent chills and subsequent collapse.

The stool, following the enema, had been carefully examined by the patient's husband, and in it a piece of lobster, apparently not much altered by its passage through the alimentary canal, was found. The portion of lobster must have remained in the canal just one week. The patient gradually rallied during the night, the pulse and temperature becoming normal. During the week following there was extreme prostration, and from four to six liquid stools daily, containing much mucus but no blood. The urine was turbid during the three or four days following the crisis, blood or albumin not being present. At the present time the patient is up and about.

In reaching a diagnosis three diseases were considered; *viz.*, appendicitis, subacute gastro-intestinal catarrh, and typhoid fever. The first, though strongly indicated by the emesis and rapid pulse, was considered improbable; for the local manifestations were slight as compared with the subjective symptoms. The patient being an adult, the symptoms seemed too grave to be attributed to a simple gastro-intestinal catarrh. The history was, rather short for typhoid fever; yet it was most favored in making a diagnosis. The positive reaction to the Widal test seemed conclusive. The crisis, however, and the subsequent course of the illness necessitated a radical change in conclusions. At one time I was forced to consider the possibility of an intestinal perforation following an appendical inflammation. I was glad to conclude that such could not have been the case; as, following the collapse, the patient's condition gradually improved. It seemed to me, therefore, that the illness was due to the ingestion of lobster, the toxins of which had been absorbed, and that the violent crisis was the result either of poisoning by naphthol or of the absorption of a large quantity of

¹ Read at a Stated Meeting of the Harvard Medical Society of New York, held October 23, 1897.

ptomains at one time. The patient received in all thirty-five grains of naphthol, four doses of which had been taken the preceding day, and, if she had been particularly susceptible to the drug it seems as though the symptoms of poisoning would have been manifested at that time. Larger doses have been administered over much longer periods without ill effect. It is, therefore, safe to conclude that the amount of the drug received by the patient was not the cause of the symptoms. Further, the urine did not display evidences of naphthol poisoning. As a final resource ptomain poisoning remains. To this the patient, owing to the temporarily depressed condition of health, was peculiarly susceptible. Symptoms resembling those presented in this case have been observed in other instances subsequent to the ingestion of lobster. The severe chill and prostration were apparently due to the overwhelming discharge of poison into the system. The reaction to the Widal test lends, in my opinion, additional confirmation to this diagnosis; as Aresdarnoro, quoted by Vaughan and Novy, in eleven cases of salmon and sturgeon poisoning, detected in the livers, spleens, and kidneys of the fish, and also in the same organs of those who ate of them, bacilli resembling, but not identical with, typhoid bacilli. Did not such bacilli give the typhoid reaction with Widal's test, and produce the ptomaines which, apparently, poisoned may patient?

AN ADDRESS.

INTERNAL MEDICINE AS A VOCATION.¹

By WILLIAM OSLER, M.D.,
OF BALTIMORE;

PROFESSOR OF MEDICINE IN JOHNS HOPKINS UNIVERSITY.

It was with the greatest pleasure that I accepted an invitation to say a few words before this section of the Academy on the importance of internal medicine as a vocation. I wish there were another term to designate the wide field of medical practice which remains after the separation of surgery, midwifery, and gynecology. In itself it is not a specialty, but embraces at least half a dozen, and so its cultivators cannot be called specialists, but bear without reproach the good old name physician, in contradistinction to general practitioners, surgeons, obstetricians, and gynecologists. I have heard the fear expressed that in this country the sphere of the physician proper is becoming more and more restricted, and perhaps this is true, but I maintain (and I hope to convince you) that the opportunities are still great, and that the harvest is truly plenteous, while the laborers, though not few, are scarcely sufficient to meet the demand.

At the outset I would like to emphasize the fact that the student of internal medicine cannot be a specialist. The manifestations of almost any one of the important diseases in the course of a few years will "box the compass" of the specialties. Typhoid fever, for example, will not only go the rounds of those embraced in medicine

proper, but will carry its student far afield in morbid psychology, and sometimes teach him, perhaps at the cost of the patient, a little surgery. So, too, with syphilis, which after the first few weeks I claim as a medical affection. I often tell my students that it is the only disease which they require to study thoroughly. Know syphilis in all its manifestations and relations, and what remains to be learned will not stretch the pia mater of a megaloccephalic senior student.

Each generation has to grow its own consultants. Hosack, Samuel Mitchell, Swett, Alonzo Clark, Austin Flint, Fordyce Barker, and Alfred Loomis served their day in this city, and then passed on into silence. Their works remain; but enough of a great physician's experience dies with him to justify the saying "there is no wisdom in the grave." The author of "Rab and His Friends" has a couple of paragraphs on this point which are worth quoting: "Much that made such a man what the community, to their highest profit, found him to be, dies with him. His inborn gifts, and much of what was most valuable in his experience, were necessarily incommunicable to others; this depending much on his forgetting the process by which, in particular cases, he made up his mind, and its minute successive steps . . . , but mainly, we believe, because no man can explain directly to another man *how* he does any one practical thing, the doing of which he himself has accomplished not at once or by imitation, or by teaching, but by repeated personal trials, by missing much before ultimately hitting."

Wherewithal shall a young man prepare himself, should the ambition arise in him to follow in the footsteps of such a teacher as, let us say, the late Austin Flint—the young man just starting, and who will from 1915 to 1940 stand in relation to the profession of this city and this country as did Dr. Flint between 1861 and the time of his death. We will assume that he starts with equivalent advantages, though this is taking a great deal for granted, since Austin Flint had a strong hereditary bias toward medicine, and early in life fell under the influence of remarkable men whose teachings molded his thought to the very end. We must not forget that Dr. Flint was a New Englander, and of the same type of mind as his great teachers—James Jackson and Jacob Bigelow.

Our future consultant has just left the hospital, where, for the first time, realizing the possibilities of his profession, he has had his ambition fired. Shall he go abroad? It is not necessary. The man whom we have chosen as his exemplar did not, but found his opportunities in country practice, and in Buffalo and Louisville, then frontier towns, and had a national reputation before he reached New York. But would it be useful to him? Undoubtedly. He will have a broader foundation on which to build, and a year or two in the laboratories and clinics of the great European cities will be most helpful. To walk the wards of Guy's or St. Bartholomew's, to see the work at the St. Louis and at the Salpêtrière, to have put in a few quiet months of study at one of the German university towns will store the young man's mind with priceless treasures. I assume that he has a mind. I am not heedless of the truth of Shakespeare's sharp taunt,

¹ Read before the Section on General Medicine of the New York Academy of Medicine, October 19, 1897.

How much the fool that hath been sent to Rome
Exceeds the fool that hath been kept at home.

At any rate, whether he goes abroad or not, let him early escape from the besetting sin of the young physician, *Chauvinism*, that intolerant attitude of mind which brooks no regard for anything outside his own circle and his own school. If he cannot go abroad let him spend part of his short vacations in seeing how it fares with the brethren in his own country. Even a New Yorker could learn something in the Massachusetts General and the Boston City Hospital. A trip to Philadelphia would be most helpful; there is much to stimulate the mind at the old Pennsylvania Hospital and at the University, and he would be none the worse for a few weeks spent still farther south on the banks of the Chesapeake. The all-important matter is to get breadth of view as early as possible and this is difficult without travel.

Poll the successful consulting physicians of this country to-day, and you will find they have been evolved either from general practice or from laboratory and clinical work; many of the most prominent having risen from the ranks of general practitioners. I once heard an eminent consultant rise in wrath because some one had made a remark reflecting upon this class. He declared that no single part of his professional experience had been of such value. But I wish to speak here of the training of men who start with the object of becoming pure physicians. From the vantage ground of more than forty years of hard work, Sir Andrew Clark told me that he had striven ten years for bread, ten years for bread and butter, and twenty years for cakes and ale; and this is really a very good partition of the life of the student of internal medicine, of some at least, since all do not reach the last stage.

It is high time we had our young Lydgate started.¹ If he has shown any signs of *nous* during his student and hospital days a dispensary assistantship should be available; anything should be acceptable which brings him into contact with patients. By all means, if possible, let him be a pluralist, and—as he values his future life—let him not get early entangled in the meshes of specialism. Once established as a clinical assistant he can begin his education, and nowadays this is a very complicated matter. There are three lines of work which he may follow, all of the most intense interest, all of the greatest value to him—chemistry, physiology, and morbid anatomy. Professional chemists look askance at physiological chemistry, and physiological chemists criticize pretty sharply the work of some clinical chemists, but there can be no doubt of the value to the physician of a very thorough training in methods and ways of organic chemistry. We sorely want, in this country, men of this line of training, and the outlook for them has never before been so bright. If at the start he has not had a good chemical training, the other lines should be more closely followed.

Physiology, which for him will mean very largely experimental therapeutics and experimental pathology, will open a wider view and render possible a deeper grasp of

the problems of disease. To Traube and men of his stamp, the physiological clinicians, this generation owes much more than to the chemical or *post-mortem*-room group. The training is more difficult to get, and nowadays when physiology is cultivated as a specialty few physicians will graduate into clinical medicine directly from the laboratory. On the other hand, the opportunities for work are now more numerous, and the training which a young fellow gets in a laboratory controlled by a pure physiologist will help to give that scientific impress, which is only enduring when early received. A thorough chemical training and a complete equipment in methods of experimental research are less often met with in the clinical physician than a good practical knowledge of morbid anatomy, and, if our prospective consultant has to limit his work, chemistry and physiology should yield to the claims of the dead-house. In this dry-bread period he should see autopsies daily, if possible. Successful knowledge of the infinite variations of disease can only be obtained by a prolonged study of morbid anatomy. Of special value in training the physician in diagnosis, it also enables him to correct his mistakes, and, if he reads its lessons aright, it may serve to keep him humble.

This is, of course, a very full program, but in ten years a bright man with what Sydenham calls "the ancient and serious diligence of Hippocrates" will pick up a very fair education, and will be fit to pass from the dispensary to the wards. If he cannot go abroad after his hospital term, let it be an incentive to save money, and with the first \$600 let him take a summer semester in Germany, working quietly at one of the smaller places. Another year spend three months or longer in Paris. Lay schemes in advance, and it is surprising how often the circumstances fit in with them. How shall he live meanwhile? On crumbs—on pickings obtained from men in the cakes-and-ale stage (who always can put paying work into the hands of young men), and on fees from classes, journal work, private instruction, and from work in the schools. Any sort of medical practice should be taken, but with caution—too much of it early may prove a good man's ruin. He cannot expect to do more than just eke out a living. He must put his emotions on ice; there must be no "Amaryllis in the shade," and he must beware the tangles of "Neæra's hair." Success during the first ten years means endurance and perseverance; all things come to him who has learned to labor and wait, who bides his time "ohne hast, aber ohne rast," whose talent develops "in der Stille," in the quiet fruitful years of unselfish devoted work. A few words in addition about this dry-bread decade. He should stick closely to the dispensaries. A first-class reputation may be built up in them. Bryom Bramwell's "Atlas of Medicine" largely represents his work while an assistant physician to the Royal Infirmary, Edinburgh. Many of the best-known men in London serve ten, fifteen, or even twenty years in the out-patient departments before getting wards. Lauder Brunton has only recently obtained his full physicianship at St. Bartholomew's after a service of more than twenty years in the out-patient department. During this period let him not lose the substance of ultimate success in grasping at

¹ This well-drawn character in George Eliot's "Middlemarch" may be studied with advantage by the physician; one of the most important lessons to be gathered from it is—marry the right woman!

the shadow of present opportunity. Time is now his money, and he must not barter away too much of it in profitless work—profitless so far as his education is concerned, though it may mean ready cash. Too many quiz classes or too much journal work has ruined many a promising clinical physician. While the Pythagorean silence of nearly seven years, which the great Louis followed (and broke to burst into a full-blown reputation) cannot be enjoined, the young physician should be careful what and how he writes. Let him take heed to his education, and his reputation will take care of itself, and in a development under the guidance of seniors he will find plenty of material for papers before medical societies and for publication in scientific journals.

I would like to add here a few words on the question of clinical instruction, as with the great prospective increase of it in our schools there will be many chances of employment for young physicians who wish to follow medicine proper as a vocation. To-day this serious problem confronts the professors in many of our schools—how to teach practical medicine to the large classes; how to give them protracted and systematic ward instruction? I know of no teacher in the country who controls enough clinical material for the instruction of classes of say 200 men during the third and fourth years. It seems to me there are two plans open to the schools: The first is to utilize dispensaries for clinical instruction much more than at present is the rule. For this purpose a teaching-room for a class of twenty-five or thirty students immediately adjoining the dispensary is essential. For instruction in physical diagnosis, for the objective teaching of disease, and for the instruction of students in the use of their senses, such an arrangement is invaluable; and there are hundreds of dispensaries in which this plan is feasible, and in which the material now is not properly worked up because of the lack of this very stimulus. In the second place I feel sure, that ultimately, we shall develop a system of extramural teaching similar to that which has been so successful in Edinburgh; and this will give employment to a large number of the younger men. At any large university school of medicine there might be four or five extramural teachers of medicine, selected from men who could prove that they were fully qualified to teach and that they had a sufficient number of beds at their command, with proper equipment for clinical work. At Edinburgh there are eight extramural teachers of medicine whose courses qualify the student to present himself for examination either before the Royal Colleges or the University. If we ever are to give our third and fourth year students protracted and complete courses in physical diagnosis and clinical medicine, extending throughout the session, and not in classes of a brief period of six-week's duration, I am confident that the number of men engaged in teaching must be greatly increased.

Ten-years' hard work tells with colleagues and friends in the profession, and with enlarged clinical facilities the physician enters upon the second, or bread-and-butter period. This, to most men, is the great trial, since the risks are greater, and many now drop out of the race,

wearied at the length of the way and drift into specialism or general practice. The physician develops more slowly than the surgeon, and success comes later. There are surgeons at forty years in full practice and at the very top of the wave, a time at which the physician is only preparing to reap the harvest of years of patient toil. The surgeon must have hands, and better, young hands. He should have a head, too, but this does not seem so essential to success, and he cannot have an old head with young hands. At the end of twenty years, when about forty-five, our Lydgate should have a first-class reputation in the profession, and a large circle of friends and students. He will probably have precious little capital in the bank, but a very large accumulation of interest-bearing funds in his brain-pan. He has gathered a stock of special knowledge which his friends in the profession appreciate, and they begin to seek his counsel in doubtful cases, and gradually learn to lean upon him in times of trial. He may awake some day, perhaps, quite suddenly, to find that twenty years of quiet work, done for the love of it, has a very solid value.

The environment of a large city is not necessary to the growth of a good clinical physician. Even in small towns a man can, if he has it in him, become well versed in methods of work, and with the assistance of an occasional visit to some medical center he can become an expert diagnostician and reach a position of dignity and worth in the community in which he lives. I wish to plead particularly for the wasted opportunities in the smaller hospitals of our large cities, and in those of more moderate size. There are in this State a score or more of hospitals with from thirty to fifty medical beds, offering splendid material for good men on which to build reputations. Take for example, the town of Thelma, which I know well, to which young Rondibilis, a recent resident at the Hôtel Dieu, has just gone. He wrote asking me for a letter of advice, from which I take the liberty of extracting one or two paragraphs:

"Your training warrants a high aim. Say to those who ask, that you intend to practice medicine only, and will not take surgical or midwifery cases. X. has promised that you may help in the dispensary, and as you can count blood and percuss a chest you will be useful to him in the wards, which, by the way, he now rarely visits. Be careful with the house physicians, and if you teach them anything do it gently, and never crow when you are right. The crow of the young rooster before his spurs are on always jars and antagonizes. Get your own little clinical laboratory in order. Old Dr. Rolando will be sure to visit you, and bear with him as he tells you how he can tell casts from the ascending limb of the loop of Henle. He was once as you are now, a modern, but he crawled up the bank twenty years ago; the stream has left him there, but he does not know it. He means to impress you; be civil and show him the new Nissle-stain preparations, and you will have him as a warm friend. His good heart has kept him with a large general practice, and he can throw *post-mortems* in your way, and may send for you to sit up with his rich patients. If Y. asks you to help in the teaching, jump at the chance."

The school is not what you might wish, but the men are in earnest, and a clinical microscopy-class or a voluntary ward-class, with Y's. cases, will put you on the first rung of the ladder. Yes, join both the city and the county society, and never miss a meeting. Keep your mouth shut too, for a few years, particularly in discussions.

"Foote's (Philadelphia) is the catalogue to which I referred. Let the old men read new books; you read the journals and the old books. Study Lænnec this winter; Forbes' 'Translation' can be cheaply obtained, but it will help to keep up your French to read it in the original. The old Sydenham Society editions of the Greek writers and of Sydenham are easily got and are really very helpful. As a teacher you can never get *orientiert* without a knowledge of the Fathers, ancient and modern. And do not forget, above all things, the famous advice to Backmore, to whom, when he first began the study of physic, and asked what books he should read, Sydenham replied, 'Don Quixote,' meaning thereby, as I take it, that the only book of physic suitable for permanent reading is the book of Nature."

A young fellow with staying powers who avoids entanglements, may look forward in twenty years to a good consultation practice in any town of 40,000 to 50,000 inhabitants. Some such man, perhaps, in a town far distant, taking care of his education, and not of his audience, may be the Austin Flint of New York in 1930.

"Many are called, but few are chosen," and of the many who start out with high aims, few see the goal. Even when reached the final period of "cakes and ale" has serious drawbacks. There are two groups of consultants, the intra- and the extraprofessional; the one gets work through his colleagues, the other, having outgrown the narrow limits of professional reputation, is at the mercy of the *profanum vulgus*. Then for him "farewell the tranquil mind, farewell content." His life becomes an incessant struggle, and between the attempt to carry on an exhausting and irksome practice, and to keep abreast with young fellows still in the bread-and-butter stage, the consultant at this period is worthy of our sincerest sympathy.

One thing may save him. It was the wish of Walter Savage Landor always to walk with Epicurus on the right hand and Epictetus on the left, and I would urge the clinical physician, as he travels farther from the East, to look well to his companions—to see that they are not of his own age and generation. He must walk with the "boys," else he is lost, irrevocably lost; not all at once, but by easy grades, and every one perceives his ruin before he, "good, easy man," is aware of it. I would not have him a basil plant, to feed on the brains of the bright young fellows who follow the great wheel uphill, but to keep his mind receptive, plastic, and impressionable he must travel with the men who are doing the work of the world, the men between the ages of twenty-five and forty.

In the life of every successful physician there comes the temptation to toy with the Delilah of the press—daily and otherwise. There are times when she may be courted with satisfaction, but beware! sooner or later she

is sure to play the harlot, and has left many a man shorn of his strength, *vis.*, the confidence of his professional brethren. Not altogether with justice have some notable members labored under the accusation of pandering too much to the public. When a man reaches the climacteric, and has long passed beyond the professional stage of his reputation, we who are still "in the ring" must exercise a good deal of charity, and discount largely the *on dits* which indiscreet friends circulate. It cannot be denied that in dealings with the public just a little touch of humbug is immensely effective, but it is not necessary. In a large city there were three eminent consultants of world-wide reputation; one was said to be a good physician but no humbug, the second was no physician but a great humbug, the third was a great physician and a great humbug. The first achieved the greatest success, professional and social, possibly not financial.

While living laborious days, happy in his work, happy in the growing recognition which he is receiving from his colleagues, no shadow of doubt haunts the mind of the young physician, other than the fear of failure; but I warn him to cherish the days of his freedom, the days when he can follow his bent, untrammelled, undisturbed, and not as yet in the coils of the octopus. In a play of Oscar Wilde's one of the characters remarks, "there are only two great tragedies in life, not getting what you want—and getting it;" and I have known consultants whose treadmill life illustrated the bitterness of this *mot*, and whose great success at sixty did not bring the comfort they had anticipated at forty. The mournful echo of the words of the preacher rings in their ears, words which I not long ago heard quoted with deep feeling by a distinguished physician, "Better is a handful with quietness than both hands full with travail and vexation of spirit."

THERAPEUTIC NOTES.

Treatment of Large Effusions into the Knee-Joint.—DÜMS (Centr. bl. für Chir., September 18, 1897) recommends an active therapy for tense effusions into the knee-joint, either by puncture or incision. Although massage, compression, etc., will in time cause the disappearance of the fluid, yet in the meantime the joint-capsule has been so long stretched that a return of the affection is probable? Even when the fluid is promptly removed from the joint there is still danger of a recurrence, and the limb should be protected from strain for some time by being very gradually brought again into service. Düms' plan of treatment is as follows: As soon as the fluid is removed, a firm bandage is applied, and the limb fixed in an immovable apparatus in an extended position. At the end of a week the bandage is removed, a few passive motions made, and a starch bandage applied. One week later the patient may go about on crutches. From this time on a gradually increasing amount of passive and active motion is allowed, and at the end of six or eight weeks a complete cure may be expected. This treatment appears tedious, but the relapses are fewer than those which follow the ordinary methods.

Atony of the Rectum.—ACHESON (*Quart. Jour. of Rect. and Gastro-int. Dis.*, October, 1897) says that atony of the rectum is a result of constipation, a sedentary life, disregard of Nature's calls, or the continued use and abuse of large enemata of cold, or, still worse, warm or hot water. The subjective symptoms of fulness in the rectum with impossibilities of evacuation, and often a faintness when it has been emptied, are well known. For treatment are mentioned coarse foods, exercise, bathing, draughts of hot water, regular massage, and the removal of the cause. Purgatives as a routine are not recommended. The following nervomuscular tonic is serviceable:

R Aloin	gr. ii
Strychnin	gr. $\frac{1}{10}$
Ext. belladon	gr. $\frac{1}{2}$
Ipecac.	gr. $\frac{1}{2}$

M. Ft. pil. Sig. One pill night and morning.

Small injections of cold water, small injections of glycerin, or a glycerin suppository may be use; or the following mixture may be injected:

R Rhatan	ii
Rect. spts.	ii
Water	ii

M.

It may be necessary to empty the distended rectum mechanically, and afterward to employ an antiseptic douche.

A New Method of Treatment of the Umbilical Cord.—

PRAUDECKER (*Rev. de Therapeut.*, September 1, 1897) describes a procedure recommended by Bar, which consists in the application of a small pair of clamps to the umbilical cord in place of a ligature. The clamp is placed squarely across the cord as close as possible to the abdominal surface. The cord is cut off next to the clamp and a light dressing applied beneath and above the instrument. On the following day the clamp is removed, and the portion of the cord which was compressed in its jaws is cut away. A small sterilized dressing is applied which does not require changing until the fifth day, when the fragment of the cord remaining will be found dry and already separated from the body. A bath is not given until cicatrization is complete.

Effect of Urotropin upon Cystitis.—NICOLAIER (*Der Arst. Prakt.*, No. 12, 1897) has been using for two years a combination of ammonia and formalin, called urotropin, in the treatment of uric-acid concretions, and bacterial diseases of the urinary passages. He has been especially pleased with its effect in cases of cystitis accompanied by ammoniac fermentation of the urine. The daily dose should not exceed 20 grains, as larger amounts, especially if continued for some time, are likely to cause some burning in the neck of the bladder and urethra, and frequency of micturition. From 5 to 8 grains dissolved in a glass of water and taken after meals, will rapidly change the character of an ammoniac urine, and after two or three days it is not necessary to administer the drug more than twice daily. Gastric symptoms do not occur even if

the administration is continued for months. The first effect of the remedy is to diminish the intensity of the ammoniac odor of the freshly voided urine. Then the reaction of the urine quickly becomes acid. The urine once more becomes clear, the crystals of triple phosphate, and ammonium urate disappear, pus diminishes, and the associated symptoms vanish. Experiment proves that urotropin does not kill the germs which cause the ammoniac fermentation, but merely prevents their development. This statement is borne out by the clinical fact that if the drug is discontinued, the fermentation reappears after a short interval. If taken for some weeks or months, however, there may be no recurrence of the fermentation when its administration is abandoned.

Massage in Chorea.—FEDOROV (*La Semaine Méd.*, September 8, 1897) is well pleased with the results obtained in ten cases of chorea by the use of massage. The patients were children from seven to fourteen years of age. The movements were at first light, then gradually increased in force until the whole body was thoroughly handled. Passive motions followed as soon as the patients were sufficiently calmed to permit them. The beneficial effects of this treatment were evident on the third or fourth day, and at the end of a week an improvement in the general condition was manifest. Fedorov believes that the massage exerts a sedative action on the central nervous system, stimulates the circulation, and so facilitates nutritive exchange, and the elimination of toxins which have accumulated in the organisms.

Treatment of Soft Chancres by Prolonged Irrigation.—Two Italian physicians, MALUSARDI and BONADUCI (*La Semaine Méd.*, September 8, 1897), have been treating venereal ulcers with prolonged irrigations of hot water at a temperature of from 47° to 52° C. (108°–117° F.). The irrigations are commenced at the former temperature, which is then rapidly raised by heating the irrigator with an alcohol lamp, or more simply, by the addition of some boiling water to that in the irrigator. The irrigation should be interrupted from time to time to give the patient a chance to rest, and the whole *séance* lasting a half-hour, should be repeated daily. Under the influence of the heat, the ulcer becomes very red in a few minutes, and there is a sensation of heat all over the body, accompanied often-times by profuse perspiration. The ulcer is finally dusted with iodol powder, and a light dressing of absorbent cotton applied. This method causes the induration on the border of the ulcer to rapidly disappear, and transforms it into a simply wound which heals readily. In the forty-one cases in which the writers employed this plan of treatment from two to eleven irrigations were all that were necessary.

Normal Blood as a Hemostatic in Hemophilia.—BIENWALD (*Wien. Med. Blät.*, July 15, 1897) has found that the application of blood obtained by aspiration from a healthy person will stop the bleeding in a hemophilic, if brought into contact with the wound. He explains this action by saying that the normal blood contains the necessary ferment to produce thrombi in the capillaries.

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THE MEDICAL NEWS AND THE CHARITIES COMMISSIONERS.

THE MEDICAL NEWS has scored another triumph in correcting abuses in the Department of Public Charities of New York City. The exposure in our columns of the disgraceful exploitation of a "drink cure" in Bellevue Hospital during the summer of 1896 resulted, after bringing the Commissioners to a realization of their insulting action, in routing an intolerable invasion of quackery. This was accomplished only after a most persistent fight. The principle, however, was permanently established that in the management of the medical and surgical affairs of the hospital the best and only safe guide is inherent in the profession itself.

The present triumph to which we allude consists in restoring to the profession, as represented by the Medical Board of Bellevue Hospital, the power to nominate appointees to fill vacancies in the visiting staff as they occur from time to time. In a recent editorial (THE MEDICAL NEWS, October 30, 1897) we said: "In anticipation of such a result (the domination of hospital appointments by political influence), we respectfully call upon the

Board of Charities Commissioners of the City of New York to reconsider its action and restore the just and equitable mode of accession to the visiting staffs of the various city hospitals." The response has come promptly and definitely, as indicated by the following letter, which has been received by the secretary of the Medical Board of Bellevue Hospital:

"DEAR SIR: By direction of the Board I have to inform you that the resolution of September 25, 1897, has been rescinded, and paragraph 3 of the organization of the Medical Board of Bellevue Hospital, dated May 12, 1882, which provided that appointments to fill vacancies shall be made by the colleges or Fourth Division is restored to full force and effect as it was prior to the resolution of September 25th.

"A. G. WEAVER,
"Secretary of the Board of Commissioners."

THE RIGHT OF FREE SPEECH.

A CASE of interest and importance to medical men has recently been decided in the United States Court at New York City, in which a New York optician brought suit for libel against Dr. Frank Van Fleet demanding damages to the amount of \$40,000. The facts in the case are briefly as follows: The plaintiff had an advertisement in the directory published by the County Medical Society of New York, in the course of which these words were used: "Headache and neuralgia often proceed from latent defects of the eyes, and especially in cases of muscular asthenopia. If present, these defects are detected by our method of testing. Proper glasses give permanent relief, and physicians can have a report on the state of any patient he desires."

At a regular meeting of the Society, Dr. Van Fleet protested against this advertisement, as its insertion was sought for the ensuing year, on the ground that printing such advertisements in the official publication of the Society led the public to believe that its appearance there was equivalent to the Society's endorsement. He went on to say that "anybody, not a physician, who undertook to cure headache or neuralgia with glasses or anything else and accepted remuneration therefore, violated the medical laws of the State and was a quack; that the Society would not allow him to advertise in that way and it should not allow any one else to do so." It so happened that his words

found their way into the public press, and the optician sued him as above.

In answer, Dr. Van Fleet pleaded the truth of his spoken words and the protection of the Court, because of the circumstances under which the remarks were made. In this the County Society not only sustained him but agreed to bear the principal cost of the suit. The optician being an alien, a British subject, the action was brought in the United States Court, Judge Wallace presiding. The theory upon which the defense proceeded was that every person has a right to seek redress before a proper tribunal in a proper manner, and that language used upon the occasion of seeking redress is privileged. Dr. Van Fleet was supported in his position by Drs. Landon Carter Gray, Andrew H. Smith, and D. B. St. John Roosa.

At the close of the case the counsel for the defendant insisted upon his motion to dismiss the complaint and for a direction of the verdict, and Judge Wallace said in effect, that since the defendant had brought forward such eminent medical authority to sustain his view, he was bound to believe that Dr. Van Fleet had ample ground for believing what he had said to be true even if the evidence did not justify him (the defendant) in finding that it was true, and that it was, therefore, his duty to direct a verdict, because if the jury should find a verdict for the plaintiff he would be obliged, under the circumstances, to set it aside.

Naturally this verdict is extremely gratifying on every account, for it settles once and for all that a member of the Medical Society of the County of New York has a right to attend the meetings and speak as his sense of duty to the public dictates without fear of suits for libel. The Medical Society itself showed its gratification by a vote of thanks to Dr. Van Fleet for the plucky fight he had made.

INTERNAL MEDICINE AS A VOCATION.

THE recent address by Professor Osler on the above subject, at the New York Academy of Medicine, which we publish to-day, offers much material for reflection. It is in brief the essence of the ratiocination, the conviction, and the anticipation of one who graces the vocation concerning which he discoursed so felicitously. As the result of much thought we have his modern Lydgate; of his con-

viction, we have an expression of his belief in the evils of early specialism; and of his hope, his scheme for enlarging the field of medical teaching.

If we do not coincide with him as to the disciplinary and preparatory years of his exemplar, it is perhaps because we construe the title of his address more literally than he, and do not use the terms Consulting Diagnostician as interchangeable with General Practitioner. The plan of training which Dr. Osler has outlined in such detail will undoubtedly facilitate the development of the former, but we are not all convinced that it will develop the highest or most useful type of the latter. In the first place, the ideal Esculapian, who spends the larger part of the first ten years of his professional life in the dispensary and the dead-house, sees very little, if any, acute disease. He is allowed to take a case of typhoid fever, or pneumonia, now and then, if they come with the "crumbs," alluded to by the speaker, but he is admonished that they lie on deflected courses between him and his goal, and it is not absolutely necessary to include them in order to reach the latter in the possession of full vigor.

Naturally, Dr. Osler does not intend that his model shall not have experience with acute diseases, he anticipates that this will be forthcoming with the transition which shall carry him from the dispensary "to hospital wards," but here he reckons with conditions which do not exist, at least for the city of New York with which we are most familiar. Those who hold hospital appointments, as well as aspirants for such appointments, are painfully aware that there is practically no "reward-of-merit" system in the hospitals of this city, and the dispensaries connected therewith. Let us take for instance, three of our largest hospitals, representing three different "social grades": Bellevue Hospital, Mt. Sinai Hospital, and New York Hospital, and inquire what proportion of the constituents of their respective staffs served in the dispensaries of these hospitals, and received their appointment as a reward for faithful or brilliant service. We feel sure that we are quite within the mark when we say that less than one-tenth of the entire number were at any time on the dispensary staff. Under such circumstances it would be necessary for our physician, developing along the lines laid down, to "look sharp" or he would find himself well along in the second decade of his pro-

fessional life without any considerable training in the recognition and handling of acute diseases, and without great prospects of getting it.

After all it is with the physician as it is with the mariner. Our admiration is greater for the pilot who can bring a strong, seaworthy craft safely through tempest, storm, and the unavoidable exigencies of the voyage, than for him who guides a weak disabled vessel from one shore to another. And so it is with the physician. He who steps in when the ravages of acute disease are overpowering the vitality and jeopardizing life, and with a little help here, or some guidance there, succeeds in influencing the scales toward Nature's side, is more worthy of our emulation than he who diagnosticates a degenerative disease, and is able to tell to within a few months when it will terminate the patient's life.

To gain this experience and to stand ready with such aid it is necessary that one should from the very beginning become familiar with acute disease and acquaint himself intimately with its every phase and variation. This experience is not to be had in dispensaries, for nine-tenths of all the cases to be observed there are of a chronic nature, and it is the diagnosis of such conditions and incidentally their prevention and treatment that the dispensary physician learns. We are constrained, therefore, to contend that in a vocational sense the general practitioner must needs depart far afield from the restrictions made by our worthy mentor.

The suggestion made by the speaker, that the time is at hand for an extension of facilities for giving practical instruction to medical students, by the adoption of the system which has operated so advantageously in Edinburgh for many years, the so-called extramural system of teaching, must strike every one interested in elevating the standard of recruits to the ranks of the profession as an extremely important one. In this city not more than one-fourth of the large hospitals are utilized for bedside teaching and this because the visiting physicians are not of the faculties of the medical colleges. If Dr. Osler's suggestions were adopted the rich material which these hospitals afford might be utilized for the advantage of the student, while the increased attention which the visiting physicians who essay to conduct courses must need give would redound to the advantage of the patient. There is no denying the fact that to-day

Edinburgh maintains her preeminence as a medical center in Great Britain, and this is largely due to the extramural system of teaching which has been developed there to such a commendable degree. We believe that the reputation and material prosperity of the medical college which first adopts this suggestion of Dr. Osler will be materially enhanced. We respectively commend his suggestion to the serious consideration of the governing bodies of American medical colleges.

ECHOES AND NEWS.

Obituary.—Dr. Charles R. Bourroughs, President of the Mercer County Medical Society, died suddenly on the 10th inst., at his home in Trenton, N. J.

The Philadelphia Medical Club tendered a reception to Dr. Howard A. Kelly of Johns Hopkins Hospital on Friday, November 19, 1897, at the Aldine Hotel, Philadelphia.

The Trachoma Bacillus.—Dr. Leopold Müller of the University of Vienna is said to have discovered the bacillus of the so-called "Egyptian ophthalmia," or trachoma.

Appointment of Dr. Ophuels.—Dr. W. Ophuels of the Pathological Institute of Goettingen, has accepted a call to the chair of Pathology in the University of Missouri.

Plague Attacks Monkeys.—The bubonic plague which is still raging in British India has attacked a colony of monkeys near Hardwar. The local authorities are trapping and isolating the diseased animals.

Lavoisier's Memory to Be Honored.—The Municipal Council of Paris has voted the sum of 3000 francs toward a statue which is to be erected to the memory of the distinguished chemist Lavoisier.

Doctor's Life Worth \$30,000.—A New York Supreme Court jury recently gave a verdict of \$30,000 against the New York, New Haven and Hartford Railroad Company for having caused the death of a doctor.

A Physician Shot while Gunning.—Dr. E. O. Cummins of Jersey City, N. J., was shot and badly injured on the 11th inst., by the accidental discharge of a gun carried by a friend who accompanied him on a hunting-trip.

Addition to St. Vincent's Hospital.—An extension to St. Vincent's Hospital, New York, is to be erected at a cost of \$250,000. It will be devoted exclusively to charity patients. The ambulance service will also be enlarged and improved.

University of Berlin Laboratory.—A new building for the chemical laboratory of the University of Berlin is now being erected at a cost of \$250,000. It will contain four large laboratories, desks for 250 students, and twenty-five research-rooms.

Strange Epidemic in Omaha.—More than 10,000 of the inhabitants of Omaha, Neb., have been suffering during the past three weeks from an unusual skin disease. The affection is not serious, but its etiology remains a mystery.

The Sterilization of Books.—Dr. John S. Billings, who is the director of the New York Public Library, recommends that when the library becomes a circulating one each book upon its return shall be disinfected by formalin before being again issued.

Famine in Archangel.—A terrible famine is ravaging the Province of Archangel, in the extreme north of European Russia, extending from the Ural Mountains on the east to Finland on the west. The province has a population of about 300,000. Many deaths from starvation have occurred.

Ophthalmia in Prussia.—Owing to the fact that ophthalmia is prevalent in East Prussia, the eyes of all school children in Königsberg were recently examined, with the result that thirty-two per cent. were found to be suffering from the disease, and of these more than one-third have trachoma.

Insane Asylum Destroyed by Fire.—The State Lunatic Asylum at Milledgeville, Ga., was totally destroyed by fire on the afternoon of the 9th inst. The thousand patients were gotten out and housed in another building after the most heroic work on the part of the staff and employees, and not a life was lost.

Phrenologist as an Expert.—For the first time in the history of the criminal courts of the State of Missouri, or probably of any State, phrenology had been recognized as a science in determining insanity. On the 13th inst., in a murder trial before Judge Zachritz, a phrenologist was permitted to qualify as an expert and testify as to the insanity of the defendant.

The Lynn Typhoid Epidemic.—The epidemic of typhoid fever at Lynn, England, is still progressing. Up to the 6th inst. there had been 300 cases, and about ten new ones are reported each day. It now appears that a similar epidemic prevailed at this place in 1892, which, like the present one, was traced to the washing of filth into the Gaywood River, from whence the water-supply is obtained.

Strange Surgery.—The medical officer of an English almshouse was recently called to account for having amputated a gangrenous foot by incising the soft parts with an old razor and dividing the bones with a worn-out rusty saw which had been thrown away as useless. The explanation offered was that if proper instruments had been used it would have been necessary to destroy them in order that they might not carry infection.

The New York Medical Journal and the Marine Hospital Service.—The *New York Medical Journal* of November 13, 1897, in commenting upon a recent editorial in the columns of THE MEDICAL NEWS, advocating the enlargement of the power and scope of the Marine Hospital

Service, says: "We are glad to see an editorial on this subject in THE MEDICAL NEWS for October 30th. The stand taken in the article is, we think, perfectly right."

Scarlet-Fever Epidemic at Norwalk.—The epidemic of scarlet fever which appeared at Norwalk, Conn., two weeks ago is still spreading. Nineteen new cases were reported on the 8th inst. All the cases have occurred in families supplied by a certain milkman, who has been arrested by the order of the Board of Health. This milkman is charged with having bought his milk from a farmer whose children were suffering from scarlet fever.

Accident Insurance for Students.—At the University of Heidelberg, all students doing laboratory work, and even those who attend experimental lectures in chemistry or physics, are required to take out an accident insurance policy covering casualties which are liable to occur in such institutions. Students who are unfortunate enough to be entirely disabled are to receive \$500 per annum, with a corresponding allowance for lesser injuries. The premium, however, is low—but two and a half cents for lecture courses per semester.

Obituary.—Dr. Harrison Allen, Emeritus Professor of Comparative Anatomy in the Medical School of the University of Pennsylvania, died suddenly on the 14th inst. of heart disease. Dr. Allen was born at Philadelphia in 1841. He was graduated from the University of Pennsylvania in 1861, and soon after entered the regular army. In 1865, when only twenty-four years of age, he was called to the chair of Comparative Anatomy and Zoology in the Medical School of the University of Pennsylvania, which position he held until 1895.

Damages Allowed for Prenatal Injuries.—The *Journal of the American Medical Association*, in its issue of November 13, 1897, mentions a very interesting decision which was recently given by Judge Chetlain in the Superior Court of Cook County, Illinois. The question was whether a child after it is born has a right of action for injuries sustained by it *en ventre sa mere* (in utero), and the judge held that there was a good cause of action stated in the case in question. Suit was brought for the child against a person who conducts a lying-in hospital, for injuries received by the plaintiff *in utero*, while it and its mother were going to the lying-in chamber.

The Typhoid Epidemic at Ligoniel.—The cause of the typhoid-fever epidemic at Ligoniel, near Belfast, Ireland, has been traced to an impure water-supply. In this instance the water rises out of limestone rock, from which it is piped into a large underground reservoir. In the reservoir there is a manhole, level with the adjacent ground, and not water-tight. Consequently, surface water from higher ground after a storm can enter the reservoir. It was discovered that in the same field with the latter was a house in which two persons were suffering from typhoid, and that the excreta had been thrown at the side and back of the house—about 120 yards from the reservoir.

Smallpox and Vaccination in Japan.—In 1870-71 Japan was visited by a terrible epidemic of smallpox, which made great ravages in Yokohama and in the small villages to such an extent that there were no well people to attend the sick. At that time every person who wished to be vaccinated was obliged to pay a small tax to the Government—a quarter of a *bu*, which is equal to nine cents of our money. Vaccination was made compulsory in 1876. This rapid stride is said to be largely due to the fact that pock-marked foreigners were rarely seen in Japan, whereas there was probably not one in a hundred of the adult population of Japan who had not had smallpox.

A Question of Priority.—According to the *British Medical Journal*, a medical lawsuit turning on a question of priority has attracted much attention in Berlin. Some time ago Dr. Casper demonstrated a cystoscope to the Berlin Medical Society as an idea of his own. Dr. Nitze claimed that he had previously constructed and exhibited an apparatus similar in principle and intended for a similar purpose, and alleged that he had shown and explained his instrument to Dr. Casper at the time. Many experts were called, among others being Professors Von Bergmann, Hahn, Wolf, and Posner, and, as is the custom of experts, their testimony was very contradictory. A verdict was finally given to Dr. Casper, and Dr. Nitze was fined.

The "Six-Penny Doctor."—Complaint is made in England against the "six-penny doctor," so-called because he accepts small fees from those who are unable to pay large ones. It is a question, says *The Medical Press*, whether he deserves the condemnation which is heaped upon him by members of his own profession. His patients undoubtedly belong to the great army of the poor who usually seek medical and surgical aid at dispensaries and the out-departments of hospitals, and who, in order to save the time spent in waiting their turn at these places, prefer to pay their six-pence, all which they can afford, perhaps, to consult a man who is willing and ready to attend to them. In this way he is certainly a benefit to the poor, and it can hardly be said that he injures the practice of his brother medical men whose patients are of a wealthier class.

National Board of Health Desired in England.—At a recent meeting of the Sanitary Inspectors' Association at Birmingham, England, a resolution was passed in favor of the establishment of a National Board of Health, its president to have a seat in the Cabinet. In commenting upon this, *The Medical Press and Circular* (Eng.) says that there is no doubt that a department of Public Health is much needed in England, and that, although the idea of having a Minister of Health is not new, the sanitary inspectors have done well to bring the matter again to public notice. The duties which should belong to a department of public health are at present undertaken by the Local Government Board. In pointing out the urgent need of such a department, the typhoid epidemic at Maidstone is referred to and the opinion expressed that

with a department of National Health in full working order, such an alarming epidemic could scarcely occur.

Health Reports.—Statistics of the United States Marine Hospital Service during the week ending November 13, 1897:

YELLOW FEVER—UNITED STATES.

		Cases.	Deaths.
Flomaton, Ala.	To November 3	65	..
Greensboro, "	November 2	1	1
Mobile, "	November 6-12	29	6
Montgomery, "	November 6-10	5	1
Selma, "	November 10	1	0
Whistler, "	November 6-12	16	2
Baton Rouge, La.	November 11	1	..
New Orleans, "	November 6-12	84	36
Biloxi, Miss.	November 5-11	11	1
Clinton, "	November 12	2	..
Edwards, "	November 8 and 12	6	..
Pascagoula, "	November 8 and 10	1	..
Scranton, "	November 8 and 10	4	1
Memphis, Tenn.	November 4-7	5	3

YELLOW FEVER—FOREIGN.

Guantanamo, Cuba	September 1-30	0	1
Matanzas, "	October 20-November 3	0	5
Sagua la Grande, "	October 23-30	49	2
Buff Bay, Jamaica	October 16-23	1	1
Kingston, "	July 23-October 23	56	25
Manchester, "	July 23-October 23	9	3
Port Antonio, "	July 23-October 23	4	4
St. Elizabeth, "	July 23-October 23	1	1
Leon, Nicaragua	October 1	0	2
Cape Haytien, Porto Rico	November 6	..	yel. fev. rep'td.

SMALLPOX—FOREIGN.

Prague, Bohemia	October 16-23	1	..
Hong Kong, China	September 27-October 2	1	1
Sagua la Grande, Cuba	October 23-30	46	1
Fukushima Ken, Japan	October 1-12	4	1
Kagoshima Ken, "	October 1-10	1	1
Miyagi Ken, "	October 1-10	2	..
Nagasaki Ken, "	October 1-10	0	1
The Hokkaido, "	October 1-10	7	5
Edinburgh, Scotland	October 16-23	0	1
Glasgow, "	October 16-23	4	..
Cartagena, U.S. of Colombia	October 5-12	7	3

CHOLERA—FOREIGN.

Madras, India	September 25-October 1	0	3
Tokio Fu, Japan	October 1-10	3	..

Corner-Stone Laid at Bellevue.—The corner-stone of the new five-story building of the Bellevue Hospital Medical College, which is being erected at the corner of First avenue and Twenty-sixth street, New York, was laid with appropriate ceremonies on the 13th inst. by Dr. Lewis A. Sayre, Emeritus Professor of Orthopedic Surgery. The conventional metal box was deposited in the stone, containing a history of Bellevue Hospital, copies of the daily papers, the alumni catalogue from 1861 to 1881, a full set of lecture-cards and alumni circulars from 1861 up to the present year, a bottle of antitoxin, and a glass tube containing spores of the bacillus aerogenes capsulatus, which was first discovered in April, 1896. The ceremony of laying the corner-stone was conducted in the presence of the members of the Board of Trustees and the Faculty, instructors, and alumni of the college. The invocation was delivered by the Rev. Dr. Roderick Terry, and Dr.

Sayre made an address. A procession was then formed which marched into the lecture-room of the Carnegie Laboratory adjoining, where addresses were delivered by Dr. Landon Carter Gray, representing the alumni; by the Rev. Dr. Terry, who spoke for the Board of Trustees, and Dr. John S. Billings, who represented the medical profession. The new college building will be one of the most elaborate of its kind in this country, and it is expected that it will be ready for occupancy in March.

Yellow-Fever Notes.—Dr. S. R. Oliphant, President of the Louisiana State Board of Health, Drs. Samuel H. Durgin of Boston, and A. Doty of New York, members of the committee appointed at the recent meeting of the American Public Health Association, are in Washington for the purpose of urging the President to recommend to Congress the appointment of a commission of expert bacteriologists to visit Havana, and make a thorough study of the cause, treatment, and prevention of yellow fever.

A telegram from Colon, Colombia, says that owing to the continued prevalence of yellow fever at Kingston, Jamaica, the Colombian Government is enforcing a quarantine against all passengers from that place to the Isthmus of Panama and Pacific ports. The mails are being detained for fumigation.

On the 9th inst., eight new cases and four deaths were reported in New Orleans. Six new cases were reported in Mobile, Ala., and but one new case in Montgomery. No new cases have been reported in Memphis, Tenn.

No new cases have occurred in Mississippi and quarantine has been raised in that State.

On the 11th inst., twelve new cases and six deaths were reported in New Orleans. The Board of Health on that day abolished all quarantine, both territorial and house, within its jurisdiction. In Mobile, Ala., one new case was recorded. No new cases in Montgomery, Ala. One new case was reported at Edwards, Miss.

President McKinley has detailed Past-Assistant Surgeon Eugene Wasdin and Past-Assistant Surgeon H. D. Geddings, United States Marine Hospital Service, for special duty at Havana, Cuba, for the purpose of making bacteriologic investigations into the cause and nature of yellow fever. These officers have been for some time engaged in laboratory work in New Orleans. Their investigations are to be carried on in Cuba until some definite conclusions are reached.

The oldest son of Sir George Duffey, President of the Royal College of Physicians and Surgeons (Ireland), died recently of yellow fever in Jamaica, West Indies, where he was stationed with his regiment.

The British steamer "Strathdon," which arrived at Bremen on the 16th inst. from Savannah, Ga., has been quarantined for five days. During the voyage one of the crew died of what is thought to be yellow fever.

Appointed State Medical Examiner.—The Board of Regents has appointed Dr. Walter Sutor of Herkimer, to fill the vacancy in the State Board of Medical Examiners, representing the Medical Society of the State of New York, caused by the death of Dr. William C. Wey.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

AN EXPERIMENTAL STATION FOR THE STUDY OF BOVINE TUBERCULOSIS—PHILADELPHIA PEDIATRIC SOCIETY—PATHOLOGICAL SOCIETY OF PHILADELPHIA—THE MUTUAL-AID ASSOCIATION OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY—THE STATE BOARD OF HEALTH'S NEW VACCINATION LAW.

PHILADELPHIA, November 13, 1897.

AN experimental station for the study of diseases of cattle is to be established at the University of Pennsylvania, under the control of the State Live-Stock Sanitary Board, and work upon a building to be used for the purpose will be immediately commenced. One of the first practical points to be determined by the Board is the influence of sanitary stabling upon the development and course of bovine tuberculosis, and to this end the following novel but simple procedure will be employed: Two stables will be built, one large, lighted, and ventilated, and having all arrangements conducive to the best sanitary conditions; the other small, aired, and ventilated with less care than the first, and representing as nearly as possible the ordinary cow-stables as seen on the average farm. Into each of these stables will be placed three healthy and three tuberculous cows, alternated, alternating in stalls between each other. The rapidity of the development and spread of the disease will then be watched in the two herds, and inferences drawn as to the value of sanitary stables.

At a meeting of the Philadelphia Pediatric Society, held on November 9th, the topic of intestinal intussusception occupied the greater part of the evening's scientific business. The medical aspects of this lesion were considered by Frederick A. Packard, who quoted a recent instance of intussusception which he had occasion to treat, and pointed out the indications for and against the use of injections as a therapeutic measure; the speaker emphasized the fact that after the third day, in such cases, the treatment referred to was useless, and he should be abandoned on account of adhesions and softening of the wall of the gut. Dr. Edward Martin, by invitation, spoke of the treatment of intussusception by surgical intervention, and thoroughly discussed the subject from the surgeon's standpoint. Dr. R. G. Le Conte related an interesting account of an instance of intussusception which he witnessed during the course of a laparotomy. In addition to the consideration of the above topic, two cases of congenital hereditary edema were presented by Dr. J. H. Jopson, who detailed the histories of the patients, and made general remarks upon the condition.

A stated meeting of the Pathological Society of Philadelphia was held on November 11th. Dr. Joseph Sailer exhibited a specimen of aneurism of the left ventricle, with myocarditis and pericarditis; there were a few partly occluded vessels with thickened walls, and much dense fibrous tissue scattered through the inflammatory lesion, and a number of cicatrices, suspiciously syphilitic in nature, in the kidneys and liver, although the patient had persist-

ently denied specific infection. Dr. Sailer also showed the lungs from a case of general septic infection; the patient first presented signs of a croupous pneumonia, which progressed to pulmonary abscess, and subsequently general pyemic infections, with collections of pus in the kidneys, spleen, and other organs, giving rise to grave constitutional symptoms, and a fatal termination. Dr. Judson Deland exhibited an appendix vermiformis, showing a common pin *in situ*. The appendix at the time of its removal contained fully six ounces of pus, and the pin occupied its lumen, which was tightly constricted in places from inflammatory processes. Dr. J. Dutton Steele read a review of the literature of Koch's "Tuberculin R.," and considered in detail Koch's early and later experiments with their disadvantages and advances, the dose, mode of administration, and bye-effects of the preparation, and its practical bearing on the treatment of tuberculosis. The chief objections to the use of the new tuberculin are the danger of septic infection, the irregular strength of the preparation, and the uncertainty in the correct dose for different individuals. Results from the employment of "Tuberculin R." are as yet too indefinite to warrant a positive opinion as to its usefulness. Other communications at this meeting were made by Dr. J. H. McKee, who exhibited an umbilical hernia in a rabbit containing a portion of the round ligament which simulated a diseased vermiform appendix; and by Dr. David Riesman, who showed a specimen of cancer of the stomach, from a case which had during life presented irregular clinical symptoms.

At the annual meeting of the Mutual Aid Association of the Philadelphia County Medical Society, held on November 9th, Dr. Charles Hermon Thomas was elected president, Drs. James Tyson and Wilson Buckby vice-presidents, and Dr. John B. Roberts secretary. Four members of the Society were elected to the Board of Directors, who passed resolutions to make efforts during the coming year to add materially to the permanent fund of the organization by obtaining legacies and donations. The Directors' report showed that a slight increase might be declared in the amount to be paid as annuities to beneficiaries; that the membership had been increased during the past year by the addition of four life, and two annual, members; and that one addition had been made to the list of benefactors. A private room in the Polyclinic Hospital has been set aside for the use of those members of the Association who may require hospital treatment.

At a meeting of the State Board of Health, held recently, resolutions were passed declaring that certificates of vaccination should not be accepted by school authorities unless they specify the existence of either the typical vesicle, the typical postule, or the typical cicatrix of vaccination; and further, that children who have recently been repeatedly, even though unsuccessfully, vaccinated by competent operators should not be excluded from school, except in the actual presence of danger from smallpox. The most casual reader will notice the diametrically opposite tenor of the two parts of this resolution; the first clause, specific in detail, the second, allow-

ing the certifier an unlimited latitude of interpretation. Further comment on the subject seems unnecessary, except, perhaps, to draw attention to the fact that there are many unscrupulous medical pirates who will take prompt advantage of the second section of the rule, with the comforting assurance that no tell-tale scar will loom up to question their veracity, if queries should be made; and who, pray, will prove that they are not "competent operators"? In these days of antivaccination agitation, laws for the enforcement of this prophylactic cannot be too stringently observed, nor can their interpretation be made too definite.

The total number of deaths occurring in this city for the week ending November 13th was 381, an increase of 51 from the preceding week, and exactly the same number in the corresponding week of 1896. Of the total number 104 occurred in children under five years of age. Reports of contagious disease showed 151 new cases of diphtheria, with 26 deaths; 57 new cases of scarlet fever, with 0 deaths; and 50 new cases of enteric fever, with 12 deaths. The outbreak of diphtheria which occurred last week in one of the wards in the upper section of the city seems to be under control, and the city health authorities have taken active measures to suppress the epidemic, and to investigate its origin, which at present is obscure.

OUR BERLIN LETTER.

[From our Special Correspondent.]

TESTIMONIAL TO PROFESSOR LASSAR—PROFESSOR VIRCHOW'S SEVENTY-SIXTH BIRTHDAY—DEATH OF PROFESSOR HEIDENHAIN OF Breslau—PLEURAL EXUDATES AND THE TENDENCY TO ADOPT AN EXPECTANT TREATMENT—A NEW HOT-AIR TREATMENT FOR LUPUS—THE WINTER SEMESTER AT THE UNIVERSITY—ADMISSION OF AMERICAN STUDENTS TO THE GERMAN UNIVERSITIES.

BERLIN, November 6, 1897.

BEFORE the members of the Leprosy Conference separated, a testimonial of their appreciation of Professor Lassar's services in the organization of the Conference was presented to the Professor and his wife. It consisted of a handsome silver service. The gift was the outcome of a suggestion of Professor Arning of Copenhagen, and was warmly seconded by all the members. It was to Professor Lassar that the Conference owed much that contributed to its success, and the interest shown in Government circles, as well as by the Emperor himself, is said to have been due to his well-directed efforts.

Professor Virchow celebrated his seventy-sixth birthday during the week of the Leprosy Conference meeting. He was acting as president of the Conference, and the opening of the first-day's proceedings came in the nature of a surprise. On this occasion Professor Lassar presented a large bouquet to the old pathologist whose work on leprosy was done during the early sixties, and whose generous consent to act as president was much appreciated. Despite his age the veteran is still in the ranks. His opinion on disputed points was eagerly sought, and regarded with the greatest deference.

The death of Professor Rudolf Heidenhain of Breslau

means that German medicine has lost one of its greatest men. This distinguished physiologist was but sixty-three years of age, and his death was unexpected. He was once a pupil of Du Bois Raymonds here in Berlin, and succeeded Purkinje in the Chair of Physiology at Breslau during 1859. His work on glandular, muscular, and nerve physiology, and, during recent years, on animal heat, the vagus and hypnotism has given him a fame which is a common possession of the medical world. He is well-remembered for a strikingly ingenious expedient employed during the antivivisection agitation in the German Reichstag some years ago. Through the influence, it is said, of the Woman's Antivivisection Society of England, a bill was introduced in the Reichstag which threatened scientific progress. It is a difficult matter, as Americans know, to persuade legislators that under the guise of humanitarianism some of the proposed laws actually are inhuman, because they are calculated to stop the wheels of science by which so much has been accomplished for humanity. Professor Heidenhain, who was very well-known, took a prominent textbook on physiology, and marked with red ink the facts, the discovery of which was due to animal experimentation and which could not have been found out in any other way. The argument was so effective that Germany has not since been annoyed with serious attempts to prohibit vivisection.

While general lung surgery is advancing with rapid strides, it is somewhat surprising to find that certain points in surgical interference with the more simple lung conditions are not as definitely determined as they seemed to be some years ago. For instance, with regard to tapping in pleurisy, it was once taught that where an exudate remains unabsorbed for a certain length of time (about three weeks) it is better to remove it. The opinion has gradually gained ground that pleurisy is nearly always of tuberculous origin, and coincidentally, the advisability of tapping, unless it be for symptoms indicating serious interference with the lungs or heart, is being doubted.

The sudden relief of pressure would sometimes appear to have led to the absorption of tuberculous material by the lymphatics and to its deposit in other parts of the body. The danger of infection, and the well-known results of a mixed infection where tubercle bacilli are concerned, has also had its deterrent action. Finally, however, the results, when the disease is allowed to run its course undisturbed, and when absorption eventually occurs, are so much better than when tapping is performed, that it has been considered probable, theoretically, that there exists in the serum of the pleuritic exudate an anti-tuberculin with certain curative properties, and consequently it is decidedly better when possible to leave the exudate to Nature for absorption.

In the matter of empyema something of the same conservatism has replaced, in the medical clinics at least, the teaching that the maxim, *ubi pus avacula*, is especially applicable to the pleural cavity. Comparison of the results obtained under surgical treatment with those allowed to run their course, either to resorption or to rupture into a bronchus and evacuation by that route, has not always been in favor of the theoretically perfect surgical proce-

dure. Often enough, the pus in such cases is caused by the diplococcus pneumoniae, not a very virulent pus-producing organism, and one that the lungs, under ordinary circumstances, are perfectly capable of handling. In children, especially, empyemas often run a favorable course when untreated. Surgical interference usually means almost inevitable mixed infection, and this leads to a chronic suppurative process with the production of cicatricial tissue. In general, expectant treatment appears to be indicated whenever there are no immediately threatening symptoms.

Dr. Holländer's method of treating lupus seems to be a distinct contribution to the therapy of an extremely obstinate affection for which the gamut of therapeutic measures is often run without success. The principle is that of cauterization of the tissues, not in the usual way, but by means of heated air. The apparatus employed consists of an ordinary Bunsen-burner to which is attached a coiled tube in such a way that the heat of the flame is directed on the coil. Air is forced through this tube, and issues from a nozzle heated to any degree desired up to 250° C. The current of heated air is directed on the affected tissues until they become white, when the *stance* is interrupted.

In the process of cicatrization subsequent to the cauterization the lupus nodules disappear, and a much less unsightly scar results than usually succeeds lupus. The explanation of the effect seems to be that a certain peristaltic contraction of the fibers of all the tissues of the skin leads to the driving of the blood from the part, hence the intensely white color which follows the application of the heated air. After some days this intense contraction relaxes in the healthy tissues, and after the throwing off of certain portions of the epiderm the circulation is restored. The illustrated account of Dr. Holländer's cases in the last number of the *Deutsche Medicinische Wochenschrift* shows that this simple procedure seems to produce excellent results, especially in facial lupus.

The winter semester of the Berlin University was supposed to have begun last week, but will really be in working order about the first week of November. Not many changes will occur in the medical faculty. Professor Winter, as announced sometime ago, goes to Königsberg as Professor of Gynecology. Professor Rubner becomes Medicinal Geheimrath.

As to the question of American students and their exclusion from German Universities with regard to post-graduate work, the situation absolutely remains what it was despite the rumors to the contrary. Such rumors, by the way, usually find their way into print about this time each year. To matriculate at the University of Berlin for advanced work in medicine all that is necessary is to show a diploma or a license from a State medical examining board. For much of the post-graduate work matriculation is not necessary, and is often gone through with more for the civic privileges it involves than for what the University gives. Matriculants practically are outside of police control for ordinary offences, being responsible to the University authorities, and have certain theater and other privileges which are an additional consideration.

The rumor as to the exclusion of foreign students came from certain laws requiring examinations in all cases where students are applicants for a degree from a German University.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

THE PATHOGENIC ROLE OF DUST—CAN A DOG HAVE THE MUMPS?—OPERATION OF CHOICE IN INTES-TINAL OBSTRUCTION.

KELSCH and SIMONIN reported to the Academy of Medicine at the session held October 5th, the results of a series of experimental researches, which show that just as *powerful agents of infection are to be found in the dust which collects upon floors, as in drinking-water*. They believe that with the exception of typhoid fever and cholera, the majority of infectious diseases, such as eruptive fevers, diphtheria, pneumonia, and especially tuberculosis, when they do not result from direct infection, are usually due to microbes existing in dust. Most of the contagious diseases which develop in barracks without having been brought in from the outside arise from the dust deposited in the course of previous epidemics or carried in upon the boots. In order to avoid such infection they recommend that the floors of such buildings be rendered impermeable by a coating of coal-tar.

LAVERAN said that coal-tar, even if applied in a satisfactory manner, is not as efficacious as it might be. "A good coat of coal-tar removes the danger arising from the floor itself, but it does not affect in any way the contagion contained in the dust existing under the floor. I am inclined to think, therefore, that the best plan would be to entirely do away with wooden floors in barracks, hospitals, and all buildings in which many people are living together."

LAVERAN reported upon a case of mumps said to have been transmitted to a dog. The animal became sick with parotiditis two weeks after its master fell ill with the mumps. It was by no means certain, however, that the dog had the same disease. The constitutional and local symptoms, it is true, closely resembled those which occur in mumps, the parotiditis rapidly subsiding, as is usually the case in human subjects. Still, it is worthy of note, that the swelling of the parotid region was limited to the right side, whereas mumps usually affects both sides. In addition, the lymphatic glands of the region were greatly swollen and tender, and they remained enlarged and indurated after the resolution of the parotiditis, a condition which is rare after mumps. Further researches are called for before the transmissibility of mumps from man to the dog can be accepted.

At the session of the Society of Surgery held October 6th, QUENU disputed the opinion of Broca, and claimed that *in certain cases of intestinal obstruction which do not yield to electricity an artificial anus is indicated*. In some cases a very small opening into the cecum permits the escape of gas and allows the intestine to resume its normal peristaltic action.

KERMISSON did not look upon celiotomy as a univer-

sal method of treatment in cases of intestinal obstruction. In numerous instances an artificial anus is the operation of choice. He is convinced "that we possess diagnostic points sufficient to distinguish the cases in which celiotomy is indicated from those which will be relieved by an artificial opening into the bowel. The decision depends absolutely upon the cause of the obstruction."

RECLUS, twelve years ago, was called to see a man seventy-seven years old suffering from intestinal obstruction and great tympanites. The formation of an artificial anus was quickly followed by the re-establishment of the normal course of gas and feces, and the patient is still living.

SECOND said that in every case, whether the diagnosis was clear or not, it is necessary to spare the patient as much as possible; hence, an artificial anus is indicated. Thus, in post-operative obstruction, such as may occur after vaginal hysterectomy, celiotomy may possibly succeed in relieving the obstruction; but according to his experience the patients so operated upon all die. The establishment of an artificial opening, on the contrary, gives the maximum chance of recovery. In conclusion he would say that the establishment of an artificial anus snatches the patient from death, oftentimes produces a complete cure or at least puts them in a position, as in the case of tumors, to be cured by a later operation, and never, or hardly ever, causes immediate death.

NELATON gave it as his opinion that in the majority of cases it is impossible to determine the cause of obstruction. In these conditions celiotomy adds an unjustifiable risk. He performed it once and death resulted, while the production of an artificial anus has given him excellent results. If one can be certain that obstruction is due to a band, celiotomy is indicated.

MICHAUX thought that in acute cases in young patients celiotomy is the only rational procedure. If there is a great degree of tympanites, it is advantageous at the beginning of the operation to puncture the intestine and to allow the escape of fecal matter and gas. He has followed this plan successfully in several cases. It is only when the laparotomy gives no result that the operation should be terminated by an artificial anus.

ROUTIER said that if one does not know the site of the obstruction it is better to perform celiotomy if the condition of the patient warrants it. Moreover, an artificial anus is not as simple as some might think. In 1889, Curtis showed that this operation had a mortality of 48.7 per cent.

HARTMANN believed that celiotomy is the method of choice in the treatment of obstruction, and that the mortality which follows results rather from the duration of the condition than from the operation itself.

CHAPUT spoke of the difficulties of celiotomy for obstruction. The intestine is often enormously distended, and the manipulation which is required to inspect it and restore it to the abdominal cavity renders the operation particularly dangerous. Even in cases of obstruction due to a band the creation of an artificial anus may give excellent results, for it is the distention of the intestine which produces the obstruction, and if that is re-

lieved the normal course of the fecal matter may be resumed. It is only in acute cases without much tympanites that the celiotomy should be advised.

At the session of October 14th, the discussion of this subject was continued. LEJARS said that there is a mild variety of paralytic ileus which yields to electric treatment. In another form of paralytic ileus there are more obstinate symptoms, and these cases may prove as serious as those in which a volvulus or a band exists. It is impossible to lay down a hard and fast rule for the treatment of all cases. An exact diagnosis is often impossible, and if electric treatment is without result he inclines toward celiotomy. If nothing is found to explain the obstruction a fecal fistula should be established.

FÉLIZET said that in children the delicacy of the intestinal walls renders celiotomy especially dangerous. This and other reasons has lead him to the conclusion that an artificial anus, which can be easily established without general anesthesia, is the best form of treatment. Some days later when the abdomen has resumed its normal flaccid condition, there will be a reasonable chance of making a correct diagnosis, and the surgeon may then act in accordance with it.

PICQUE thought that in genuine obstruction treatment should depend upon the diagnosis. If, as often happens, this cannot be exactly determined, an exploratory laparotomy should be performed, and is the cause of obstruction is found, an attempt should be made to relieve it. If no cause is found, then either an artificial anus or an entero-anastomosis is indicated. Naturally, if the diagnosis is that of a lesion not amenable to operative treatment, an artificial anus should be performed to relieve the patient as much as possible.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.—SECTION ON GENERAL MEDICINE.

Stated Meeting, Held October 19, 1897.

DR. F. L. BISHOP in the Chair.

DR. WILLIAM OSLER of Baltimore read the paper of the evening, entitled

INTERNAL MEDICINE AS A VOCATION. (See page 660.)

DISCUSSION.

DR. WILLIAM M. POLK: I feel much indebted to the distinguished gentleman who has so kindly come a long distance to give us his impressions as to the right path to be followed to attain success in internal medicine. If the author were not present, it might not be out of place to draw attention to the enviable position which he himself has reached by following the lines so gracefully sketched in the paper of the evening. I do not know but that there is a good deal in the Doctor's intimation, that surgeons are perhaps excused from the possession of the amount of cerebral tissue, or the exercise of that tissue, which is essential to the success of him who confines himself to internal medicine. No man can practise any department of medicine unless he has a knowledge of

internal medicine. All, therefore, that Dr. Osler has said, as to the necessity for persevering work, we should take to ourselves quite as much as he intends the consulting physician to claim. There is no doubt that the surgeon takes up his work where he who gives his attention to internal medicine leaves off. This does not necessarily imply, however, that all bad and hopeless cases are turned over to the surgeon; for the practitioner of internal medicine, by reaching conclusions as to the limitations of his powers, is in a position to say whether he can continue the work, or whether it shall be taken up by the surgeon.

The poorest surgeon is he who begins his work as a surgeon; for he inevitably magnifies his field to the detriment of that of the physician, frequently when his comrade would have been able to bring the case to a successful conclusion. Often, if the surgeon has but the patience to withhold his hand, he will find that there are means and measures at his command, not strictly surgical, which will accomplish the purpose.

In reference to the way in which a good consultant is made, along the lines suggested by Dr. Osler, one of the first principles is to learn how to write. One must possess ideas if one would give expression thereto, and ideas cannot be obtained except as suggested by Dr. Osler. But, those who have followed some of the attending consulting physicians through the wards of the hospitals, not so very far away, remember full well how the men who wrote had the greatest reputations, but oftentimes the men who did not write could best tell what was the matter with the patients. No matter how much knowledge may be possessed, if we expect to win the confidence of those who are not merely at our doorstep, but in the adjoining towns and distant cities, the legitimate method of professional advertising must be learned and practised.

The curse of to-day is specialism. This may seem a broad statement to make; but it is, nevertheless, true. Specialism makes narrow, uneducated physicians. The human mind is so constituted, that given any problem to solve, it builds upon it, raises it up, magnifies it until every other idea is completely overshadowed. Thus, it occurs, that while specialism has accomplished great good, it is to-day demoralizing the profession by bringing it into contempt with the laity. Many patients are made to believe, perhaps honestly on the part of the physician, that conditions which are amply met by the ordinary rules of hygiene are of such vast importance that they must be attended to then and there or some dire calamity will result. This is perhaps presenting a low view of specialism, but it has its low as well as its high side. No man will be a good specialist who has not been a good general practitioner. In this respect the example of the carrier-pigeon should ever be borne in mind, which, when loosed to execute some special mission, rises higher and higher, ever circling upward and upward to obtain the broadest view, and then gathering its strength, starts and flies straight to the goal where it would be.

DR. ANDREW H. SMITH: I have been interested in observing how the two preceding speakers approached the question from two directly opposite points of view. Dr.

Osler's idea of a practitioner of internal medicine seemed to be that he should start from the very inception of his medical career with the distinct idea of making himself a consultant. Dr. Polk, on the other hand, has an idea to the main chance, and immediately starts off with a view to success by obtaining practice. Perhaps it would be best to choose a happy medium between the two.

With reference to the preparation of which Dr. Osler spoke, it would certainly require all the time that he had assigned to it, and it seems that the study of internal medicine would necessarily include a very considerable knowledge of the specialties. In order to attain the necessary erudition, all opportunities which open in the way of practice except such as are conducive to obtaining business as a consultant must be refused.

It is said of John Hunter that at one time when engaged in a very earnest study of some subject, in the midst of which he was interrupted by a professional call, that he put it off and put it off as long as he could until he thought the patient's patience would be exhausted, and then, throwing his work aside, said: "I suppose I must go and earn that damned guinea." This is the necessity which presses upon us in this utilitarian age to such an extent that, unless a certain number of young number of young men are determined to follow the lines indicated by Dr. Osler, it seems that the great consultants of the future will be about as scarce as the great statesmen of the present time. About the period during which Dr. Flint was so prominent here there were many great statesmen; they are gone, and we look in vain for their successors. Just so in medicine. There is a multitude of very clever men, but there are very few who stand head and shoulders above their fellows. Aside from a special training, it seems that to reach the place which had been attained by the men mentioned by Dr. Osler that there must be some peculiar attending circumstances.

Many young men have come to me and asked what they should do—where they should settle, and I have always told them to see much of disease, to put themselves in touch with it in any way they could, but at the same time to only handle as much as could be thoroughly and exhaustively studied; to keep themselves constantly occupied with sick people, and to treat every case, whether that of a tramp or a millionaire, with the same painstaking care. This character of work, continued year after year, without in any way seeking the plaudits of the world, simply plodding along day after day, always doing good work, with the interests of patients at heart more than personal aggrandizement, will almost invariably lead to success.

There is one point upon which I wish to touch in particular, and that is the distinction between a good diagnostician and a good practitioner. It is said of the French school that they first make a diagnosis and then are impatient for death to occur, that the diagnosis may be satisfactorily verified. It seems that many of our consultants have about the same idea. Frequently they are unable to assist us in therapeutics. I believe there is something in the therapeutic instinct. There are some men who, when you consult them, always give you an idea to fol-

low—something to do for the patient. This instinct, which teaches a man what may be done to relieve suffering, even though life may not be prolonged, is of immense value. I have often found this faculty to be remarkably developed in men whose field of labor is rural, where they have been thrown upon their own resources. I have often come in contact with such men, and have been surprised at their fertility in therapeutics, and how many times they "get there" when men much more thoroughly equipped halt by the way.

DR. ABRAHAM JACOBI: I am wholly unprepared to discuss this question, but will say a few words in favor of those who have made internal medicine their vocation, if only in the lower or middle walks of the profession. The practitioner of internal medicine has lost ground during the past ten or twenty years in favor of the specialist. Internal medicine has certainly lost in the opinion of the public. The practitioner of this branch of the profession does not spill much blood, does not crush bones, cannot be heard at work in the next room; the principal labor is accomplished in the brain, and is not very noisy. The surgeon removes a tumor which the general practitioner has diagnosed, and the result is that people say "Isn't he a brilliant surgeon? Doesn't he do fine work?" and it might be added, "Didn't he get your fee?"

Everything now goes to the specialist. If a woman has a pain in the head, she must go to a neurologist; if it is somewhere about the feet, she must go to a chiropodist; the nose must be blown by a rhinologist, and the laryngologist takes the case of catarrhal croup; there is the abdominal surgeon and the appendicitis man, so that now nothing remains for the practitioner of internal medicine; his vocation is gone.

I have been a general practitioner nearly all my life, and hope to live a few more years and die a general practitioner. I am quite satisfied with my position; because it appears that if there is any breadth in medical science, it is in the practice of internal medicine. Everybody deems the specialist very broad and deep, when, as a matter of fact, a great many of them do not know anything about medicine. "Internal medicine is a vocation where one deals, not only with every organ of the body, but with lives and hearts. Such a practitioner must care for, not only existing diseases, but for such diseases as may be developed; he naturally is the hygienist of the family. If a good sanitarian is wanted, it will be necessary to look for him, not among the surgeons, the laryngologists, or even among the bacteriologists, but he will be found among broad, well-educated internal practitioners, and if the accomplishments of the general practitioner are compared with the dexterity of the ever so good specialist, it will be found that there is more breath, more impressiveness, and more influence, privately and publicly, in the accomplishments, achievements, and actions of the general practitioners, take them altogether, than specialists can ever acquire.

From Hippocrates all the way down to modern times, there have been those who have made internal medicine their vocation. The surgeons of olden times have disappeared from history and from the memory of the profes-

sion. It is always the memory of the internal physician which survives. I believe that specialism is now at its height, not at the top of the ladder, but at its height, and we shall have fewer specialists in the future. It is my certain conviction that whatever there is that is good and useful for the common weal, will have to be searched for in internal medicine, which will then be the vocation of the profession.

DR. OSLER: I have listened with a great deal of interest to what has been said, and do not wish to be understood as reflecting seriously upon the surgeon. I only intended to say that with the surgeon success comes earlier, and that with him, in many cases, it is very much more a matter of hands than of head. In reference to a young man starting out in general practice, I believe that the plans followed by the young men in London could be followed with profit in our large cities. In London the young man who aspires to consultant-work does the junior duties about the hospitals and dispensaries, in many cases until he is forty-four or forty-five years old, before he reaches the wards. The young man, in the large cities of this country, who aspires to be a consultant should probably do more or less general medical practice, but the main work upon which reputations are to be built, should be in the hospitals and dispensaries. I am quite sure that the London method has proven successful, and that many of our best men in this century have never been in general practice; that is to say, in a large general practice, but have directly developed from dispensary and hospital work. There is no reason why a young man, during the first five or six years, who is looking forward to be a consultant, should not learn to use the ophthalmoscope, just as well as the microscope. He is sure that if Dr. Flint did not know much about bacteriology he took care to have a young man about him who did. There is one thing which always impressed me in regard to Dr. Flint's character, and that is, he retained to the last a remarkable degree of receptivity.

In regard to diagnosis, I believe it is a very important matter in consultation. In a large proportion of cases it is the only important function of the consultant. Everything rests with the diagnosis. Of the last three cases he had seen within twenty-four hours, one had pernicious anemia which was not recognized—the patient had been treated for malaria and the diagnosis would give him a few months or years, and possibly give him life; the second case, being cancer of the stomach, it did not make any difference; in the third case, the diagnosis may or may not save life, depending upon the surgeon into whose hands the patient falls. One trouble with the consultant is that their visit usually precedes that of the undertaker, and that they sometimes do not reach the door before the black flag is out. This is one of the saddest things in the life of a consultant; he is simply an attendant upon deathbeds.

In conclusion, I believe the position of internal medicine in this country will grow better and better. I feel confident that the younger men will devote themselves to internal medicine in the broad sense of the term—in the sense of being hospital physicians, clinical investigators,

and clinical teachers. After all, the chief prizes of the profession do not fall into the hands of specialists, but into those of the men who have had a long, hard, uphill struggle, who have worked and toiled for years as surgeons and as physicians.

HARVARD MEDICAL SOCIETY OF NEW YORK.

Stated Meeting, Held Saturday, October 23, 1897.

THE President, DR. JOHN WINTERS BRANNAN, in the Chair.

DR. FOLLEN CABOT, JR., read the paper of the evening, entitled

RABIES; SOME EXPERIMENTAL WORK ON A NEW METHOD OF IMMUNIZATION.

The author exhibited a trephine such as is used in Paris for making subdural inoculations in rabbits and guinea-pigs. He also showed an apparatus devised by himself for holding an animal during inoculation, thus avoiding the necessity of tying it to a board, and the consequent fright and struggle. The animal is chloroformed previous to the trephining.

The paper gave in detail the results of experiments made upon guinea-pigs and rabbits at the research laboratory of the New York Board of Health, and described at length the process of preparing the immunizing solution. The dry-cord method, which is employed by Dr. R. J. Wilson, is the one used by the author. This consists of a dilution made from fresh medulla or brain taken from a rabbit which has died of rabies. A stock solution is made and kept on ice in varying amounts of sterile glycerin, and each day dilutions are made from it for immunizing purposes. Such a solution is kept and used ten days. The advantages of this method are: (1) it can be tested for impurities before being used; (2) it is more exact and saves much time; (3) the stock solution may be sent to distant places and used by physicians in general.

DR. HOWARD LILIENTHAL said he possessed little knowledge of the subject, but it seemed to him that the author's work is valuable, and that he deserves to succeed in his very worthy object of furnishing an immunizing solution which will be within the reach of practitioners all over the country. As it is now, it is only in a few of the large cities that the antirabitic serum may be obtained. Personally he has never seen a case of rabies, but the results of the author's experiments would seem to show that such a disease really exists.

DR. JOHN H. HUDDLESTON expressed surprise at the hesitancy of the preceding speaker in admitting that there is such a disease as hydrophobia, and said it had always been his opinion that the existence of the disease is generally accepted. Personally, he has no doubt of its reality because he has seen three cases occurring in human beings, all of which were fatal, and all proved to be genuine by subsequent inoculation of animals. Nothing was done for the patients because nothing could be done. If an immunizing agent has at last been found, we will have to thank the author of the paper for it.

DR. REYNOLD W. WILCOX confessed to an even

greater skepticism on the subject than that shown by the first speaker, and said he had never seen a case of hydrophobia in a human being. A number of alleged cases of hydrophobia have come under his observation, and he has seen one or two dogs which were said to be suffering with rabies, one of which he personally watched for several weeks; but he is still to be convinced that the disease exists, even in dogs. He brought forward the fact that in Constantinople, which swarms with dogs, rabies is unknown, and, that in other countries where conditions supposed to be equally favorable to the development of the disease are found, it has not been heard of. He thought the author deserved credit for his work, but added that the best result which can be obtained from such a line of investigation will be the determination of the non-existence of rabies.

DR. ARTHUR B. DUEL said that the belief that such a disease as rabies does exist is firmly planted in the public mind, and is shared by many physicians. If it can be proved that there is such a disease, too much cannot be said in praise of the work of the author in an endeavor to discover an immunizing serum, and one which will be accessible to physicians far removed from large cities.

DR. EDWARD M. FOOTE remarked that in experiments on animals it should be remembered that one cannot always reason by analogy; for the same agent does not affect human beings and animals alike. This fact has been a block against which many men have stubbed their toes. Even the great Koch himself made this mistake, as shown by the disappointing results obtained when his tuberculin was tried on the human subject.

DR. CHARLES SCHRAM said that those who are familiar with Pasteur's work and that now being done at Budapest can hardly doubt that the human being is subject to hydrophobia.

DR. FRANK H. DANIELS expressed himself as being skeptical as to the existence of rabies either in animals or man. He is of the opinion, however, that it is sometimes best to treat patients when they think they need treatment, and in such cases it would be well to have some immunizing agent to administer to persons who have been bitten by an animal, and who fear they are going to have hydrophobia.

DR. DILLON BROWN declared that he is thoroughly convinced that there is such a disease as rabies, and that it may exist in the human subject. No one who has witnessed it in the rabbits and guinea-pigs which have been inoculated at the Health-Department laboratory can possibly doubt its existence. He said he had seen one case of hydrophobia in practice. The patient had been bitten on the cheek by a supposedly mad dog, and was sent for treatment to the only institution in this city where the antirabic serum is employed. A certain number of injections were given and the patient promptly died on the sixteenth day after developing a classic case of hydrophobia. Unfortunately no autopsy was obtained. Whether the disease was due to the bite of the dog or to the inoculations is a question. Taking all things into consideration, it is not unlikely that it was caused by the latter.

DR. FOLLEN CABOT, SR., said that during his long

residence in New York he has observed two cases of hydrophobia, both of which resulted fatally within four days of the appearance of the first symptoms. Both cases were carefully watched, and no hysteric element was present. In one the disease was the result of the bite of a dog, in the other it was caused by the bite of a cat.

DR. FOLLEN CABOT, JR., said he was surprised at the skepticism displayed by some of the members present. After the work of Pasteur he thought no one could doubt the existence of rabies. The guinea-pigs and rabbits which have been inoculated at the laboratory of the Health Department all developed the disease, presenting the same symptoms and invariably dying within a certain number of days.

DR. WILCOX remarked that skepticism has been growing year by year, and is made stronger by the reports issued by the so-called Pasteur Institute in this city, which prove, if they prove anything, that the patients treated there all die within a certain length of time after receiving the inoculations. The speaker said that from a report of the Pasteur Institute of St. Petersburg, which he had been reading recently, it seemed that the patients which died after the antirabic inoculation really died of septicemia. He also said that there is no known inoculable disease which has an incubation period of from one day to twenty-five years, which is the limit claimed by the believers in hydrophobia.

THE PRESIDENT asked the author if any definite lesions are found in animals who die after experimental inoculation, and, if such exist, whether they have ever been found after death in persons who believed they had hydrophobia.

DR. CABOT replied that some definite lesion has been found in pathologic work on animals, although it has not been clearly determined. He also took exception to Dr. Wilcox's remark in regard to the incubation period of rabies being from one day to twenty-five years. He thinks that no one nowadays makes such a claim. The disease generally appears within fourteen days, and always within a month. Every animal inoculated with the serum at the Health-Department laboratory developed symptoms of rabies in from three to sixteen days, and died within a month. The disease begins with gradually increasing paralysis of the hindquarters, paralysis of the jaw, progressive weakness, and in the *dumb* form the animal becomes weaker and weaker, and finally lies down to die. In the *furiosus* form delirium develops, the animal becomes wild and dies within a few days.

DR. WILCOX then said that the symptoms described by the author as occurring in the inoculated animals are precisely the same as those which appear in guinea-pigs after they have been injected with cod-liver oil, *i.e.*, symptoms of ptomain poisoning.

DR. CABOT replied that it is quite possible that symptoms resembling those of ptomain-poisoning may develop after the antirabic inoculations.

DR. CHARLES SCHRAM then read a paper, entitled
PTOMAIN POISONING FROM EATING LOBSTER.

(See page 659.)

DR. WILCOX remarked that in the light of the subse-

quent events all would agree with Dr. Schram in his diagnosis, although many difficulties presented in the beginning. He also said that no internal preparation of bismuth is poisonous, although many curious effects have been noted after its administration. He cited the case of a woman who during four- or five-months' stay in a hospital received no bismuth whatever, and yet a mass of it weighing half a pound was found in her stomach after death. He also referred to a case of psoas abscess resulting from caries of the spine, into which one ounce of a ten-per-cent. emulsion of bismuth had been injected, and in which serious symptoms of poisoning developed. He stated that in all the cases of bismuth poisoning which have been reported the drug has been used externally in combination with glycerin. The speaker has taken 90 grains of bismuth internally with no bad effect except the resulting constipation.

DR. FOOTE said that the sudden disappearance of the fever might have been due to the large evacuation; in other words, that the temperature may have been caused by long retention of undigested food. He mentioned the case of a woman, suffering from fecal retention, who suddenly developed such serious symptoms that she seemed to be in danger of dissolution. All symptoms were immediately relieved by the discharge of a quantity of fecal matter through an artificial anus.

DR. DANIELS said he did not consider the case one of ptomain poisoning, because the symptoms were not sufficiently acute in the beginning. There would have been severe vomiting, diarrhea, and collapse within two or three hours, followed by great pain. He referred to an instance in which several members of a family suffered in this way from ptomain poisoning, due to drinking butter-milk.

DR. SCHRAM, in closing, remarked that retention of fecal matter would not explain the high fever which preceded the evacuation. The patient was a strong, healthy woman, not likely to be prostrated by such a movement. As against the theory of ptomain poisoning, of course there is the fact that two other members of the family ate of the lobster and were not in the least affected by it. He also expressed himself as not being sure that the naphthol did not play a part in causing the trouble. The drug was retained for thirty-six hours above the fecal mass, and was discharged with the latter. This he considers an important point.

REVIEWS.

APPENDICITIS AND ITS SURGICAL TREATMENT. By HERMAN MYNTER, M.D. (Copenhagen), Professor of Operative and Clinical Surgery in Niagara University; Surgeon to the Sisters of Charity Hospital in Buffalo, N. Y. Philadelphia: J. B. Lippencott Co., 1897.

THIS is a monograph of 303 pages submitted by the author to his alma mater for the degree of M.D., twenty-six years after his graduation. "The degree of Doctor of Medicine is not conferred in Denmark at graduation as in America," although the right to practice is given.

Aside from publishing the histories of seventy-five cases

of his own, the author has industriously conned the literature of the subject, and has given us a monograph at once scientific in conception and interesting in treatment. He has made it clear that appendicitis is a surgical disease, and in so doing accepts the verdict of American physicians. We believe that in no other country do surgeons and physicians agree more universally on any topic in the whole realm of medicine, than does the American profession on this.

The author has divided his subject into several chapters, dealing respectively with the history of the disease, the anatomy, histology, and function of the appendix, and the etiology, pathology, classification, symptomatology, complications, diagnosis, prognosis, and treatment, medical and surgical, of appendicitis. We wish he had not included Austria under "Germany," but this seems to be an inevitable failing of American writers.

The book is very readable and interesting, and will certainly meet the approbation of American surgeons. We hope it may do some much-needed missionary work in other parts of the world.

THERAPEUTIC HINTS.

For Asthma.—

℞ Tr. opii 3 i
Ætheris sulph. 3 ii.

M. Sig. Fifty drops at intervals of one-half hour until the spasm is relieved.

For Acute Infectious Gastritis in Infants.—

℞ Cupri arsenitis gr. $\frac{1}{10}$ — $\frac{1}{4}$
Sacchr. lact. gr. 3 i ℥ i.

M. Div. in chart. No. XVI. Sig. One powder hourly, and when improvement begins give one powder every two or three hours.—*Krüger*.

An Excellent Vermifuge for Children is as Follows:

℞ Benzonaphthol } aa gr. xxx
Santonica }
Sacchr. alb. gr. 3 i ℥ i.

M. Div. in chart. No. XX. Sig. Two to five powders daily.

For Cephalalgia.—Pyramidon, related to antipyrin, is reported to be of great value for the relief of headache and all neuralgias of a rheumatic origin. The dose is 1 to 3 grains in water. Not more than 5 grains should be administered during an attack.

For Arterial Sclerosis.—A potion consisting of water and bicarbonate of soda, to which is added a sufficient quantity of lactic acid to neutralize the former, is advocated by Rumpf as a diuretic in arterial sclerosis. It also increases the elimination of the calculi-forming salts.

For Chronic Cystitis.—

℞ Methylene-blue gr. xxxii
Talcum gr. xlviii
Lanolin q. s.

M. Div. in pil. No. XXIV. Sig. Two to four pills daily.